The Milroy Lectures

THE CAUSES, PREVALENCE, AND CONTROL OF PULMONARY TUBERCULOSIS.

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LECTURE III.[1]

Delivered on March 12th.

PREVENTIVE MEASURES.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—In this, the last of the three lectures which I have the honour to deliver, I shall confine my attention to a consideration of certain of the preventive measures calculated to reduce the prevalence of pulmonary tuberculosis. I have for some years past made a study of the measures adopted in one or other country in Europe and I hope in my expanded lectures to be able to set this information out in some detail. I think, however, that I shall be making best use of the time at my disposal this afternoon if in the first place I refer briefly to one or two foreign countries and afterwards discuss the steps which are being taken in England with a view to diminish the ravages of this disease. I must, however, confine myself to the special features in each case.

To whatever country we turn we find one eminently gratifying circumstance, and that is the keen interest which is manifested in the crusade against tuberculosis by the crowned heads of Europe. At home we have His Majesty the King taking a directly personal interest in the foundation of sanatoriums and we see him evincing his sympathy with the movement in Prussia by his visit to the far-famed Falkenstein. In Germany, as far back as 1881, we read of the Emperor William I. sending to the Reichstag through Prince Bismarck his ever-memorable message which has resulted in the establishment of that vast industrial insurance system which is now doing so much for the promotion of sanatoriums in the Fatherland. In Russia it was through the instrumentality of the Emperor Alexander III. that the sanatorium Halila in Finland was procured by the State, and it is owing to the generosity of the Emperor Nicholas II. that another site was obtained on the Baltic and that over £50,000 were set aside for the erection thereon of a sanatorium to the memory of the Empress Marie Alexandrovna, herself a victim of the tubercle bacillus. In Holland the Queen-Mother, when she ceased to be Regent, presented her estate in Gelderland as a site for a sanatorium and contributed £10,000 towards the cost of the institution. In Sweden we find King Oscar II. generously devoting the sum which was presented to him upon his jubilee to the erection of three sanatoriums, each for 100 beds: one in the north, one in the centre, and one in the south of the country. In Austria the Emperor and the late Empress have contributed liberally to the Alland sanatorium which is situated in the beautiful Wienerwald at a point easily accessible from the Austrian capital. All these are gratifying indications of that growing importance which is being attached by those in high places throughout the world to preventive and curative medicine.

As in my last lecture, I shall yield to Germany the place of honour because I feel that in the matter of prevention and control of tuberculosis Germany can teach us much which may be helpful. It is to the German Empire that we must turn our attention if we wish to become familiar with the most thorough system which at present obtains for the cure and hence in no small measure the prevention of tuberculosis. It is there that we shall find a Government which takes a very lively interest in the matter and which indirectly aids the curative process. Moreover, the Imperial Board of Woods and Forests provides facilities for the acquirement of sites for sanatoriums and the Imperial Health Office has set an excellent example in drawing up and circulating a memorandum on tuberculosis which is in my view a model of what such memoranda should be. This memorandum and a prize essay on Tuberculosis as a Disease of the Masses, written by Dr. Knopf of New York, are made use of for educational purposes in the country, a preventive measure which I should gladly see followed in England. It is, too, in Germany that we find numerous organisations concerned with the prevention of tuberculosis and the erection of sanatoriums, and of these agencies the most noteworthy is the German Central Committee for the erection of sanatoriums, of which Professor Pannwitz is the secretary-general.

There is no notification of tuberculosis in Prussia, but in Saxony pulmonary tuberculosis occurring in public institutions is notifiable and medical men are compelled to inform the police when a phthisical patient is, in consequence of the insanitary condition of his environment, likely to prove a danger to his neighbours. It is the duty of the police in all cases such as the above to cause a thorough disinfection of all infected articles and places. Saxony is often quoted as a country in which this compulsory notification of tuberculosis is in force, but when the facts are ascertained it is found that the compulsion only applies to pulmonary tuberculosis and even in the case of that disease only to certain conditions. There is nothing approaching general compulsory notification. But apart, perhaps, from the matter of education, it is in her insurance system that Germany is paramount and that in my opinion her greatest influence for the cure and limitation of pulmonary tuberculosis is exerted.

The fact that there is in force among the working classes in Germany a system of compulsory insurance against sickness, accidents, invalidity, and old age is certainly well known to those whom I have the honour of addressing, but possibly the details of the scheme are not so familiar. I will therefore briefly recapitulate such portions of it as are necessary for a comprehension of the arrangements with regard to consumption. I would add, however, that those who wish for more detailed information will find an excellent account of the system in so far as it affects the disease here under consideration in Vol. II. of the Transactions of the British Congress on Tuberculosis. This account was prepared for the Congress by Privy Councillor Bielefeldt, President of the Senate in the Imperial Insurance Department of Germany. The invalidity insurance, which is the only one of the three branches which we need here consider, embraces workpeople of all trades and it provides pensions for invalidity and old age. The Act which embraces these provisions subjects to compulsory insurance persons of certain specified occupations who are over 16 years of age and who are in receipt of yearly earnings not exceeding £100. Towards this invalidity insurance the employer and employed theoretically contribute equal parts, but as a matter of actual practice the workmen's share is frequently paid by the employer without any deduction being made from the worker's salary. The State itself, it is important to note, grants a subsidy of 50*s.* per annum for each pension, and it also defrays the expenses of the Imperial Insurance Department and effects gratuitously the payment of pensions through the post-offices.

This system of invalidity insurance arose out of the fact that an analysis of the invalidity statistics showed that of all male workers engaged in mining, metallurgy, and building who became invalids up to the age of 30 years more than 50 per cent. suffered from pulmonary tuberculosis, and the figures for females were practically identical. A consideration of these and other facts led to the modification of the old Invalidity Act and by the provisions of the amending Act (the Invalidity Insurance Law of July 13th, 1899), which came into force at the beginning of 1900, certain restrictions which formerly obtained were removed. Under their present powers the insurance institutions may go so far as to make an experimental cure upon a patient who is already in receipt of a pension and they may send the sick to sanatoriums, health resorts, and other suitable places. If, too, the patient relinquishes the treatment without good reason and thereby threatens to become a prolonged charge upon the funds the pension may be refused either wholly or partially. Furthermore, this statute provides that the insurance institution shall contribute to the support of the bread-winner's dependants so long as he is in a sanatorium. This is a very

[1] Lecture I. and the first and second parts of Lecture II. were published in THE LANCET of July 11th (p 73), 25th (p. 206), and August 1st (p. 297), 1903, respectively.

important provision and one likely to promote the cure of the patient and to prevent him from leaving the institution before he has given the treatment a fair trial. If the sum paid to the relatives is insufficient the insurance institution by its influence with charitable organisations is able to augment the allowance. The duties of the insurance authorities extend to endeavours to procure suitable employment for those who are leaving the sanatorium and among the rules connected with one of the insurance institutions is the following: "At least three weeks before dismissal from the sanatorium every patient has to request the inspector of the institution to apply for work at the appropriate place. It is the purpose of the sanatorium to restore the capability for work and it is necessary to make use of this capability at once on the return home so that the absence of means for maintenance and the want that would follow do not cause the advantage to be lost which has been gained by a successful cure at the sanatorium." There is only one more point with which I need trouble you, but it is an important one. The insurance institutions invest their surplus capital in a manner to promote the health of the worker by, among other things, lending at a low rate of interest money for building workmen's dwellings. In this sense the insurance force seems to me to be performing an admirable preventive work.

As to the influence of this insurance system upon the health of the people I will quote the following passages from a German report: "The three branches of the German National Workmen's Insurance—the sickness, accident, and invalidity insurance—supplementing one another mutually, form a complete organisation and have resulted in the formation of a new working man's code which in the inevitable fluctuations of modern industrial life will afford to all those in need of assistance a welcome aid and in its further development cannot fail to exercise a great and salutary influence on the economical and social conditions of the working people—indeed, on the entire nation." As regards the improved social condition which I wish here more particularly to accentuate I would draw attention to one more passage from the German work to which I have already referred: "It is comprehensible that workmen's insurance with its far-branching institutions and performances, must affect public life in many ways. Through it the legal condition of the workman is raised to a higher standpoint. In place of the former almsgiving the workman has now a claim on sick relief and pension. The social condition of the workman is advanced by the assurance of relief which extends itself also over the family in case of sickness, incapacity from work, or death. In spite of the burden cast upon the employer through workmen's insurances wages have advanced and production has increased in the German Empire. ..... The workmen's insurance has also done much in furthering the hygienic conditions of the working people. By the circumstance that, in cases of sickness and incapacity from work, indemnity is to be paid the endeavours to avoid and prevent dangers of sickness and accident receive not only a moral but also a financial impetus. That the health of the workman is guarded or restored as soon as possible lies in the common interest of the managing boards of the sick clubs, of the Employers' Association, and of single employers, whose zeal for social reform is furthered by the insurance institutions on the one side and of the workmen themselves on the other. The consequence is that more and more is being done for better and more thorough cure. *The working people receive more and more care from the physician.*" (The italics are mine.) Since that date there are signs in this country that a more hopeful view may ere long be taken and I see that Dr. A. P. Hillier, the secretary of the National Association for the Prevention of Consumption, has recently taken to Berlin a deputation from the friendly societies of this country in order that they might see for themselves the advantages of the German methods and determine to what extent they are practicable in England.

It has to be borne in mind that the insurance system in Germany is dependent upon the united efforts of the employed, the employer, and the State. The matter is largely a social and political one and must be decided upon those grounds, but I have dealt with it here at some length because, in common with Sir John Burdon Sanderson,[2] I feel that in this compulsory insurance against invalidity the Germans have a system the value of which it is difficult to over-estimate, and I say this, not because this system aids so materially the erection and maintenance of sanatoriums, but because the material benefits which the insurance system provides in ill-health of all descriptions must obviously improve the resistance of the host against the onslaught of the tubercle bacillus. As an illustration of my point I would add that by the provisions of the Acts in question it is enacted that when it is feared incapacity for work may ensue, medical treatment is granted with a view to *preventing* disablements. This is preventive medicine properly understood. This workman's insurance system in Germany, as I have already said, was initiated by the Emperor William I. in 1881.

At the time of the British Congress in 1901 the honorary secretaries of the State section endeavoured to awaken the interest of English insurance and friendly societies in this matter. They were able to procure a valuable contribution from Mr. E. W. Brabrook, C.B., chief registrar of the friendly societies in this country, and an exhaustive essay from Mr. Hoffman, statistician to the Prudential Insurance Company of America. Both these gentlemen naturally approached the problem in a purely critical spirit and the conclusion at which they independently arrived was that it was not in the interests of either insurance societies or friendly societies to contribute towards the erection or maintenance of sanatoriums.

The progress of the movement for the erection of sanatoriums in Germany has been altogether remarkable. Professor von Leyden, speaking in the name of the German empire at the British Congress in 1901, stated that there were 22 sanatoriums in 1899, 39 in 1900, and 59 in 1901. From an interesting account given by Dr. Pannwitz in the June (1902) number of the German periodical *Tuberculosis* it would appear that in the spring of 1902 there were no fewer than 89 public sanatoriums either in existence or in process of being erected. This total is exclusive of the 20 private sanatoriums which were then in existence in Germany. As we have already seen no fewer than 37,000 patients were treated in these sanatoriums in 1901.

FRANCE.

Briefly summed up, the principle which the French have endeavoured to apply better than any other nation is that of the early recognition of the disease by the establishment of the anti-tuberculous dispensaries. France has recognised that it is at present impracticable to provide sanatoriums for the whole of the 400,000 to 500,000 tuberculous persons believed to exist in the Republic and has appreciated, too, that, even were this practicable, the detection and prevention of tuberculosis, as well as the treatment of patients discharged from sanatoriums, would still be an essential portion of the scheme in its entirety. It was this belief that led Professor Calmette, Professor Landouzy, and Professor Letulle to lay down at the British Congress on Tuberculosis the following expression of opinion: "We wish, without in any way prejudicing the rôle which the sanatorium must play in the battle against consumption, to urge upon governments, local sanitary authorities, Poor-law authorities, and charity organisations the necessity of encouraging the institution of anti-tuberculous dispensaries as the best means of struggling against tuberculosis in the working classes." The idea of these institutions appears, as far as I can ascertain, to have originated with Dr. Bonnet-Léon, and it was brought before the French Commission on Tuberculosis by Professor Calmette, director of the Pasteur Institute at Lille. Professor Calmette gave an excellent account of the operations of the dispensary inaugurated at Lille in the Transactions of the British Congress. Shortly stated, the object of this and kindred institutions is to educate the public in hygiene and to afford assistance to the poorer workmen who are suffering from tuberculosis. In Professor Calmette's opinion dispensaries of this nature should *precede* and *complete* the foundation of sanatoriums. In the first instance they afford an opportunity for selecting suitable patients for sanatoriums and in the second they offer facilities for carrying out after-treatment of those who have already sojourned in sanatoriums. Belgium has also developed this dispensary idea to a very high degree. The example set by Dr. Bonnet-Léon and Professor Calmette has been followed by others and a society has been founded in Paris with the object of furthering the development of such institutions, while at Arras and Nantes similar institutions are in course of construction.

There are now in France several sanatoriums of a private

[2] Our Duty to the Consumptive Breadearner, Brit. Med. Jour., July 6th, 1901.

character. There is at Angicourt (Oise) a sanatorium for the poor of Paris, as also elsewhere sanatoriums either erected or in course of erection for the poor of other places, such as Bordeaux, Lyons, &c.; there are also several hospitals for tuberculous children in addition to those at d'Ormesson and Villiers-sur-Marne, both of which have agricultural colonies connected with them.

NORWAY.

As explained in my last lecture I am anxious to bring to your notice the conditions as regards Norway because the death-rate from phthisis in that country shows no sign of diminution. It is probably owing to this fact that the Legislature has determined to attempt to grasp the problem by a series of special enactments directed against the disease. By the Act which came into operation at the beginning of 1901 it is obligatory to notify to the medical officer of health (1) pulmonary or laryngeal tuberculosis attended with tuberculous expectoration; (2) fistulæ in the bones, the joints, or the glands which the physician regards as being of a tuberculous nature; (3) lupus, if attended with discharge; (4) tuberculous affections of the alimentary canal or of the urinary system provided that the tubercle bacillus had been demonstrated; and (5) death due to tuberculous disease such as the above or change of abode in similar circumstances. The information conveyed by this means to the medical officer of health must be regarded by him as absolutely confidential. Notification may, at the option of the local sanitary authority and with the consent of the State, be imposed upon the consumptive person each time the abode is changed. It is the duty of the attending physician to insist upon cleanliness in the house of the patient and if he be unable to effect this the duty devolves upon the medical officer of health who, if necessary, can order the removal of the patient to hospital; husbands and wives may not be separated. The medical officer of health may forbid tuberculous persons from taking part in the preparation or sale of food-stuffs and forbid tuberculous females from acting as nurses or attendants on children. I am informed by Dr. Hölmboe, the director of the medical service of Norway, that in the carrying-out of the foregoing regulations no serious friction has arisen, but he adds that it is but very rarely that patients are sent to a hospital against their will. The right was exercised in Christiania in only four cases in 1901.

The Norway regulations are, so far as I am aware, the most comprehensive of any in existence and we shall all watch with interest their effect upon the behaviour of tuberculosis in Norway. As regards sanatoriums Dr. Hölmboe tells me that at present there are only two such institutions for the poorer classes, but for *isolation* proper as opposed to *cure* use is made of the general hospitals or of institutions erected for the purpose of isolating the tuberculous sick who are a danger to the community.

I am afraid that I shall be unable in this lecture to deal as I had intended with Denmark, Austria, and Hungary, and I must therefore pass on to consider what is being done in

ENGLAND.

I propose now to consider what is actually being carried out or contemplated in England with regard to the control of pulmonary tuberculosis, and in the first place let us look at the prevalence of the disease in this country. Dr. J. F. W. Tatham tells us that, with a few trifling exceptions, there has been during the last 50 years a decrease in the mortality ascribed to phthisis at every age period and in both sexes, but that the rate has varied widely and has been much greater in the female than in the male sex. The figures must, he warns us, be taken for what they are worth and he thinks that the decrease may not be wholly real. Better diagnosis and improved nomenclature may account for some of the decline. The greatest incidence of the disease is at present at the age period of from 45 to 55 years for males and from 35 to 45 years for females and in this sense there has been a material shifting of age incidence since the period from 1851 to 1860. In the year 1900 there were in England 42,987 deaths from pulmonary tuberculosis.

Assuming, as has been generally done, that a phthisical patient lives on an average three years there are likely to be about 120,000 persons suffering from pulmonary tuberculosis at the present time. But the record of the post-mortem room tends to show how very fallacious these figures are likely to be. Professor Clifford Allbutt in an address which he gave at the London Congress put this aspect of the question in a telling fashion when he said, "I am guilty of no extravagance when I suggest that one-third of you who hear me, wittingly or unwittingly, are or have been infected with tubercle. Some of us, ailing indefinitely, may have been the innocent means of infection to others, so secretly stalks infection in our midst."

What is the machinery in operation for ascertaining the whereabouts of both the recognised and unrecognised cases?

Notification.—The number of urban and rural district councils which are adopting the voluntary notification of pulmonary tuberculosis is steadily increasing, but unfortunately it is very difficult to ascertain the precise number. Assuming, however, no check is given to the progress by the production of a logical reaction against extreme measures the near future may see a very considerable adoption of voluntary notification. It cannot, however, be denied that in some places there is a distinct disinclination on the part of the medical practitioner to notify owing to the ban under which such notification may perhaps place the patient. The future, in my view, depends very largely upon the discretion with which the knowledge acquired by notification is utilised. Such pioneers in the movement as Dr. J. Niven of Manchester and Dr. A. Newsholme of Brighton find, I gather, no serious difficulties in the administration of what they regard as the necessary measures and if their administrative example be followed all should be well. Logically, notification is no doubt necessary, if by the means proposed we are to "stamp out," as it is called, the disease, but unfortunately the post-mortem records show us that in addition to the notified cases we must still have a considerable number of unnotified cases potent for harm; and we have to bear in mind that the attempt to establish a leper class is not unlikely to lead to an uncertain amount of concealment of active tuberculosis. These considerations raise the important point as to whether pulmonary tuberculosis shall be compulsorily notifiable.

If such compulsory notification renders it necessary to subject those suffering from the disease to all or many of the disabilities under the Public Health Acts to which those who are suffering from the acute infectious diseases are legally liable, there can, I think, be little doubt but that the answer to the question is in the direct negative. Were it otherwise, a patient suffering from pulmonary tuberculosis would be constantly traversing the statutes when he ventured outside his own door or entered any public institution or conveyance. Assuming, however, that the disease is placed, as I have advocated, *in an entirely separate category* from the group in which what are called the acute exanthemata are ranged and that the information obtained by notification is discreetly used, there would seem to be no very great difficulty in the way of a modified form of obligatory notification; for instance, it might be well to have compulsory notification of pulmonary tuberculosis in the case of patients occupying tenement houses or other places where the first principles of cleanliness are not observed and where the people live much in common with tendency to overcrowding.

I have very grave doubts as to whether it is desirable even in regard to voluntary notification to include any forms of tuberculosis other than pulmonary; it might, I think, in the first instance, be well to limit notification to cases of pulmonary tuberculosis in which the condition and environment of the patient are such that danger to the public is liable to accrue. As to this, I may again quote Professor Koch who, when referring to the subject of notification, said: "Fortunately it is not at all necessary to notify all cases of tuberculosis, nor even all cases of consumption, but only those that owing to their domestic conditions are sources of danger to the people about them." There is, I think, much to be said for this view. For the present it seems to me that the wisest course is that every encouragement should be given to voluntary notification and that the question of compulsion, save possibly in quite exceptional circumstances, should be postponed until our sanitary authorities and the public have come to appreciate better the *relative* nature of the problem. I agree, in fact, with the motion which was proposed at the Congress in London by Dr. Newsholme and which in the form in which it was eventually carried stood thus:—

> That the voluntary notification of phthisis attended with tuberculous expectoration, and the increased preventive action which it has rendered practicable, have been attended by a promising measure of success, and that the extension of such notification should be encouraged in all districts in which efficient sanitary administration renders it practicable to adopt the consequential measures.

If compulsory notification is to be attempted it should, I think, take the form of a period of trial, say for five

years, in one of our large towns, and I have been interested to hear that the corporation of Sheffield, acting no doubt under the advice of Dr. John Robertson, its medical officer of health, has now (August, 1903) a Bill before Parliament which embodies a clause providing for the compulsory notification of pulmonary tuberculosis. If this Bill with the clause referred to receives Parliamentary sanction an interesting experiment will have been set going in Sheffield. The clause in question gives power to the officials of the corporation to enter any house in which there is a patient suffering from pulmonary tuberculosis and to perform any necessary disinfection or cleansing. I am interested to note that the clause relates to pulmonary tuberculosis only and that "no provisions contained in any general or local Act of Parliament relating to infectious disease shall apply to tuberculosis of the lung or proceedings relating thereto under this section." This means that the disease is placed, as I suggested in my first lecture, in an entirely separate category. The information derived from notification is, I understand, to be treated as absolutely confidential and the necessity for the rigid observance of such secrecy seems to be accentuated more and more every day as one reads that in certain places outside of England it is an offence against the law to entertain in one's house a tuberculous subject who is not a relative.

Facilities for bacteriological examination.—If we are to determine early and with accuracy the existence of cases of pulmonary tuberculosis, and as to the importance of early recognition both for the sake of the patient and the public there can be no doubt, it is desirable that every facility shall be afforded to the members of the medical profession to obtain the trustworthy examination of suspected sputum without delay and without expense. The busy medical practitioner can ill afford the time to make such examinations himself and furthermore he has not the opportunities for keeping himself in touch with current bacteriology. Moreover, the necessity for facilities for bacteriological examinations and for serum reactions is urgently obvious in respect of acute diseases such as diphtheria and enteric fever, and hence there is need for numerous well-equipped and conveniently situated laboratories in which such examinations can be made.

Fortunately provisions of this nature are being rapidly made and appreciated throughout the country, and although I cannot pass in review anything that is being done I may perhaps in regard to the provinces make mention of the admirable work that is being carried out at the Thompson-Yates Laboratory at Liverpool, at Owens College, Manchester, and at Birmingham, Bristol, Cardiff, and other places. I may also, while of course recognising the work that is being done by many of our large towns, refer to the progress which is being made in this direction by certain of our county councils by those, that is to say, who have appointed medical officers of health. In certain counties there is now a complete organisation by which every medical man in the county may without trouble or expense procure bacteriological examination or serum reaction. But as regards this question of bacteriological examination I would point out that it is in no sense scientific preventive medicine to wait until tubercle bacilli can be detected in the sputum; by that time the disease may have obtained a very considerable foothold on the patient. The essence of preventive medicine as early as possible is to secure the patient more particularly with regard to pulmonary tuberculosis. This can only be done by educating the public in the enormous importance of seeking medical assistance on the first indication of illness, or better still, by encouraging a condition of affairs by which they shall submit themselves to a periodical and thorough physical examination at the hands of their general medical practitioner. As Dr. Knopf remarks, "We cannot solve the tuberculosis problem without a family practitioner." This is the preventive medicine of the future. In the meantime we must look to our sanitary authorities, our hospitals, dispensaries, and other public institutions to use their influence in this direction. Insurance and friendly societies might also do much good work in this particular, and I am interested to see in the last annual report of the National Association for the Prevention of Consumption that arrangements have been made to furnish certain of these bodies with the necessary popular literature.

But in this matter of what is called the education of the people may I utter a note of warning? It is better to be ignorant than to possess fiction in place of fact, and it cannot, I think, be denied that in connexion with this subject of tuberculosis there is much fiction of a very dangerous nature and such that is likely to harass very materially sanitary administration generally. Since my last lecture Dr. E. C. Seaton has been good enough to bring to my notice an admirable example of a medical lecturer straining rather after effect than accuracy. The lecturer is reported to have stated "that every case of consumption was as much a case of infection as small-pox and scarlet fever. If that were the case and they were able to put their finger upon small-pox and stop it, they ought also to be able to put their finger upon consumption and stop it." The same lecturer added that consumption killed 140,000 people annually in England and Wales. The Registrar-General's annual report for 1900 gives the deaths from pulmonary tuberculosis for that year at *42,987!*

The education and examination of school children.—Of all the means which I have as yet discussed none seem to me to touch in importance that to be attached to the teaching of the laws of health in the private and public schools of this country. I find difficulty in understanding the position of those whose view it is that anything that is being done to-day or to-morrow will result forthwith, or even in the immediate future, in the "stamping out" of tuberculosis. There is no parallel for such an expectation in the history of epidemiology, certainly when the extensive presence of tuberculosis as revealed by post-mortem examinations is held in view.

A very large amount of good may, it seems to me, be done by the education in elementary hygiene and by the periodical and thorough examination of the children in our public schools. I would have the children taught the vast importance, in relation to the tuberculosis problem and to health generally, of fresh air, abundant light, plenty of cubic space per person, and cleanliness; the older children might be shown models of good and bad houses and taught the manner in which houses, huddled together on a limited space, obstruct air and light. I would, moreover, have the children periodically examined, not only as regards the condition of their lungs, but as to their general physical progress and the state of their special senses. Well-regulated physical exercises performed in moderation would also be of value. In this way we should, in my view, be doing a work which would produce results long before the children themselves became householders. Not only would measures such as these tend to prevent and to cure all tuberculous diseases, but they would also have an effect on all other diseases dependent upon diminished resistance, dirt, overcrowding, and absence of light; they would reduce, too, physical infirmities and defects of the special senses.

The Minister of Public Instruction in France, after seeing the report of a commission which he had appointed to examine into the question of tuberculosis in schools, formulated certain regulations which comprised among other things the following. 1. All schools are to be so constructed as to secure abundant light and air and the walls and floors are to be composed of impervious and easily washable material. 2. Each pupil in a boarding-school is to be provided with a card setting forth his or her weight and chest measurements and a revision of such data is to take place every three months.

I am glad to find that Sir James Crichton Browne is bringing the weight of his authority and eloquence to bear in this direction. In a recent presidential address, delivered before the medical section of the International Congress for the Welfare and Protection of Children, he stated that "under-weight is at all early ages common and the most frequent sign of insufficient feeding, malnutrition, and incipient tuberculosis, and I do not doubt that the periodical measurement of children would very often, by disclosing a check in growth or a marked deviation from the normal proportion between height and weight, lead to the detection of the disease still undeclared by any outward symptom and therefore in that stage most amenable to treatment."

I have some hope that the near future may see an advance in this matter of the examination of school children. The county councils which have recently been intrusted with the administration of the Education Acts have here an admirable opportunity of showing initiative and if they properly appreciate their opportunities they will begin with the periodical, say fortnightly, examination of the children under their care. In this connexion I am glad to note that the recent report of the Royal Commission on Physical

Training (Scotland) has recommended *inter alia* a medical inspection such as is here suggested.

Fortunately, the transmission of tuberculosis by direct inheritance is so rare that the circumstances need not enter into practical politics. But children are born tuberculisable though not tuberculous and we are interested in preventing, so far as possible, the hereditary proclivity towards the disease. In endeavouring to do this we need not take quite such a broad evolutionary view of preventive medicine as was taken by Oliver Wendell Holmes when he said: "There are people who think that everything may be done if the doer, be he educator or physician, be only called in season. No doubt; but in season would often be a hundred or two years before the child was born and people never send so early as that."

The control of expectoration.—The importance of the proper control of sputum in limiting the spread not only of tuberculosis but of all other diseases in which the active agent may be contained in the sputum or saliva cannot, I think, be doubted, and for this reason all those interested in the prevention of communicable diseases must welcome any step likely to control promiscuous expectoration. As a matter of actual fact, the habit is very largely a class practice and the remedy of equalising the classes in this particular should not be difficult of attainment. One has only to compare the floor of a third-class with a first-class smoking compartment to be satisfied that the habit of spitting is in no sense a physiological necessity. This matter, as also that of placing a handkerchief before the mouth during coughing or sneezing, is one of popular education and in this connexion we must look to the National Association for the Prevention of Consumption to continue its admirable efforts. But I cannot help thinking that it is both undesirable and unnecessary to accentuate *too much* the phthisical aspect of the question and I am glad to see that this is apparently the view taken by the Home Office in approving by-laws directed towards the control of the spitting habit.

It seems to me that the most useful attitude which can be taken up is that the practices of unregulated expectoration, coughing, and sneezing are unwholesome practices calculated to spread disease and that therefore efforts should be made to control them. Let us avoid hysteria. Already much has been done, and in the matter of official by-laws the example has been set by the Glamorganshire county council, on the initiative of its able medical officer of health, Dr. William Williams, who has recently had the honour of being appointed by the Royal College of Physicians of London as the Milroy lecturer for 1904. This example of Glamorganshire has, I believe, already been followed by Radnorshire and a similar by-law is likely to be shortly in force in Worcestershire. The subject is also being seriously considered by other county councils. I was told recently by Dr. G. Reid (county medical officer of health of Staffordshire), by Dr. J. R. Kaye (county medical officer of health of the West Riding of Yorkshire), and by Dr. J. Wheatley (county medical officer of health of Salop) that the councils of each of these counties were contemplating action in this direction. The action quite recently taken by the London County Council will be cordially welcomed by all Londoners.

It appears to me that this is a subject of elementary cleanliness which might be promoted by every sanitary authority in the kingdom, not only as regards its value as to the control of tuberculosis, but in the interests of that general cleanliness which is likely to conduce to the prevention of several preventable diseases. The action which has been taken by numerous large towns with regard to the prohibition of spitting in tramcars and the exhibition of notices to the same effect in the carriages of the underground railways of the metropolis cannot fail to be appreciated by the public at large. The use of expectorating flasks or the employment of other means of rendering sputum innocuous by those suffering from pulmonary tuberculosis accompanied by expectoration is an obvious necessity, and the use and cleansing of flasks, &c., constitute one of the many advantages which accrue from a short stay in a sanatorium; indeed, this educational value of sanatoriums is not the least valuable of the uses to which these institutions may be put.

The disinfection and cleansing of infected dwellings.—Into the details of this matter I have no time to enter and I merely wish to insist upon the great importance in relation to the efficacy of both these measures of providing in new houses, and wherever practicable in old, impermeable and washable surfaces to the walls, floors, and ceilings in order that both disinfection and cleansing may be carried out at frequent intervals with the least possible expense and inconvenience. This is a provision which, like the control of expectoration, has application to the prevention of communicable diseases generally and to the promotion of cleanliness and one which would, I think, receive the support of all sanitary authorities.

Sanatoriums.—When dealing in my last lecture with the German statistics I discussed the influence which sanatoriums might be thought of as exerting in the limitation of consumption, and I need not refer at any length to the subject at the present moment. As curative agents these institutions are almost indispensable and in the matter of prevention they are likely to curtail the prevalence of the disease by aiding education and by reducing the number of advanced cases. No one who has studied the working of sanatoriums can doubt that they are of great value in a curative sense, but if only say 20 per cent. of those who leave the sanatoriums do so with their sputum free from bacilli there is still a very material margin, even supposing these 20 per cent. remained thus free until death, an expectation which is, I fear, not always realised.

Similarly, if we take the case of homes for advanced consumptives, institutions in which Professor Koch seems to have such very great faith as preventive agents, we should remember that we are only isolating cases of consumption which have been potent for harm since the tubercle bacillus first appeared in their sputum, possibly many years ago. I cannot altogether agree with Professor Koch that the cases which from their inability to carry on the battle further retire to their homes to die form the most dangerous class *quâ* infection. My own view is that the danger is greatest in the phase preceding that final withdrawal, during which time the patient is able not only to move about in his own home, but also to work, to occupy railway carriages, omnibuses, public-houses, and churches. During all this time he is, according to Flügge's school, spraying bacilli into the air in close confined spaces. He is also doing this in his home. I think, therefore, we may take it that to isolate only advanced cases, desirable as it may be as a matter of cleanliness, comfort, and humanity, is not a step which we are justified in telling the people will "stamp out" the disease. I think that Dr. Niven of Manchester is facing the problem in the only practicable spirit, when by the untiring efforts of his well-trained medical staff he searches out the cases, encourages cleanliness, practises disinfection, and advises the patient as to the best means of reducing the chances of infection. It is in the inculcation of the general principles of health, which include more air, more light, more cleanliness, and generally better housing, that we are pursuing the surest and the best tried road towards success. By all means let us have sanatoriums and homes for the dying, but do not delude the public into believing that if they spend their money on these things alone they will at once and materially reduce the prevalence of the disease.

To those whose belief it is that the disappearance of leprosy from this and other countries was the direct result of the segregation of lepers and who hold that had no such segregation taken place the human species would have become extinct I commend a re-examination of the facts. I would also ask them to ascertain, if they are able to do so, the precise effect of isolation hospitals alone upon the prevalence of certain of the acute exanthemata. I venture to suggest that they may possibly emerge from their researches in a far from dogmatic frame of mind and that they may be inclined to view with less disfavour a thesis that the prevalence of unrecognised cases is capable of explaining in some degree the non-fulfilment of the prophecies of those who once proclaimed that isolation hospitals would completely "stamp out" the diseases for which they were intended. This view in no sense leads, as some suppose, to the conclusion that isolation of the acute exanthemata is a useless measure. On the contrary, an isolation hospital is, in my opinion, an indispensable unit of every properly equipped sanitary area, and the real value of such an institution will be the more apparent in accordance with the promptitude with which the cases of infectious disease are recognised and the use which is made of such cases in tracing out unrecognised or anomalous cases. Possibly such cases not infrequently outnumber the recognised cases.

Even as an isolation hospital is but a small part of the

sanitary organisation of a well-ordered district, so is a sanatorium but a very small part of the whole tuberculous problem. In the matter of prevention the isolation hospital is much more important than the sanatorium owing to the far higher infective power of the acute exanthemata, for which such institutions are mainly utilised.

As regards the value of sanatoriums for pulmonary tuberculosis, one of the most experienced medical officers of health in England, Dr. Spottiswoode Cameron of Leeds, writing to me with reference to the work of the Leeds Sanatorium, states: "I regard what we are doing in the clearing of insanitary areas and the supervision we are giving to the subject of overcrowding as likely to do a great deal more for the prevention of consumption than the mere isolation of a few early cases in a sanatorium." Dr. Cameron is not, I think, alone in his views on this matter.

Difficulties seem to be experienced, especially in America, in providing sites for the erection of sanatoriums. I see in the *British Medical Journal* of July 25th that a Bill has recently been approved by means of which it is impossible for any city or "for any fraternal order, charitable society, or philanthropic individual," to establish a hospital or even a camp for consumptives except under practically prohibitive conditions. The Bill is, it appears, regarded by the *Boston Medical and Surgical Journal* as, to a large extent, putting an end "to the work of public-spirited citizens in New York State in combating and restricting the ravages of tuberculosis." All this is the result of a "mistaken idea of the dangers" of such institutions and it is against this very misconception that I am endeavouring in these lectures to protest.

And now let me very shortly draw your attention to some of the work which is being carried on in this country with regard to the provision of sanatoriums.

The action taken by county councils.—The powers which county councils now possess of providing isolation hospitals and the extent to which they are making use of such powers suggest that these bodies are better fitted than any other local authorities to provide sanatoriums. Up to recently, however, there has been some question as to whether the statutes enabled county councils to make such provision, but it has now been held by the Local Government Board that county councils can, by applying the expression "infectious disease" to consumption, solely for the purposes of isolation either provide accommodation for cases of that disease themselves or enter into an agreement with a properly constituted body for so doing. The application of the term "infectious disease" in these circumstances does not render the patient subject to disabilities under the Public Health Act. Action in this sense has already been taken by the Westmorland county council and it is likely that other countycouncils may soon take similar action. I am told by Mr. F. Vacher of the Cheshire county council that the local authorities in Cheshire are being circularised upon the subject and that if the majority are in favour of the county council providing sanatoriums action will be taken. Mr. E. Sergeant of the Lancashire county council, Dr. Reid of the Staffordshire county council, and Dr. S Barwise of the Derbyshire county council also tell me that the matter is under the consideration of their councils and Dr. Kaye of the West Riding county council has for some time had a very thorough scheme prepared. Certain other county councils have shown their sympathy with the movement by either contributing or expressing their willingness to contribute towards existing or projected schemes promoted by private enterprise. The county councils of Westmorland, Worcestershire, and Cornwall may be quoted in this connexion. I may add here that the problem with regard to the provision of sanatoriums generally has been materially simplified by the expression of opinion on the part of the Local Government Board in reply to a question from the corporation of Sheffield that sanatoriums are to be regarded as hospitals within the meaning of Section 131 of the Public Health Act, 1875.

The actions of boards of guardians.—Boards of guardians in several places are now making efforts to provide separate accommodation for the tuberculous sick under their care and for the open-air treatment of such patients where this is practicable, even in the metropolis, and in large towns such as Liverpool and Sheffield great advances have been made in this direction and good results obtained.[3] But so far as I am aware the only case in which a new permanent sanatorium separate from the workhouse has been actually erected through the instrumentality of the Poor-law is that provided by the guardians of the city of Liverpool, a scheme which in its initiation and completion is largely due to the efforts of Dr. Nathan Raw who was good enough to take me recently over this institution and to explain to me the details. The three boards of guardians have combined and have obtained a provisional order which was confirmed by Parliament. They have now erected a substantial and admirably arranged building, situated at Heswall on an elevated site overlooking the Dee and the Welsh Hills and the institution was opened not long since by the Right Hon. Walter Long, M.P., President of the Local Government Board. It is a two-storeyed building providing 24 beds, 12 in each wing, the administrative department occupying the centre of the building and extending out to the rear; the cost, inclusive of the site, has been about £500 per bed. The guardians of the Bradford Union are, I believe, now making somewhat similar provision for their tuberculous paupers upon a site at Eastby near Skipton. The cost per bed will, it is believed, work out at about £220.

The proportions of this subject may be gauged by the fact that on July 7th, 1900, there were 1562 recognised cases of pulmonary tuberculosis in the infirmaries, workhouses, metropolitan asylums, and district asylums, and that during the year 1899 there were 2895 deaths in these institutions from pulmonary tuberculosis alone.

The treatment of tuberculous paupers on a large scale has recently been the subject of discussion in the metropolis and it is somewhat difficult in considering questions such as this to free oneself from the atmosphere of pity and, standing afar off, to take an impartial view of the position. Obviously we should all wish to see those who through ill-health have failed in the struggle or who are temporarily disabled put back into the ranks of the workers if even for a short time, but it seems to me that from the economical standpoint it would be wise to begin as it were at the other end of the scale and by the adoption of some such system as obtains in Germany secure treatment for the worker at the first onset of his illness. Indeed, I believe that Dr. Arthur H. Downes, the chief medical inspector for Poor-law purposes at the Local Government Board, has already expressed unofficially a somewhat similar view. It is conceivable that were elaborate provision made for the tuberculous paupers of the metropolis London might find itself in the position of having to provide accommodation for many tuberculous sick in excess of what might be termed its normal contribution—i.e., advanced tuberculous cases might seek refuge in the metropolis in order to qualify themselves for participation in its sanatoriums. From a philanthropic standpoint they would be welcome; from an economical standpoint the matter might be serious. The philanthropists and the economists appointed by the ratepayers must settle the matter. It is a social rather than a medical problem, albeit it is difficult to separate the one from the other.

[3] The Treatment of Tuberculosis in Hospitals and Infirmaries, Brit. Med. Jour., Nov. 8th, 15th, and 22nd, 1902.

Address

ON

THE DEVELOPMENT OF INSANITY IN REGARD TO CIVILISATION.

Delivered at the Annual Meeting of the British Medical Association at Swansea, July, 1903,

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GENTLEMEN,—The object of this address is to demonstrate that with the progress of civilisation mental breakdown becomes more serious and more frequent and the varieties of insanity are more chronic and less curable than in the early days of a century ago, when life was simpler and men were more content. It is a universal law that the most highly integrated functions of vital organisms are the most apt to suffer derangement.

The human mind—the most highly evolved process in relation to matter—has from the earliest times been subject

to some obscuration or disintegration, but the cure and care of the insane, now so much in the "ambient air," was hardly known as a subject of serious study 100 years ago. The last century has been the most marked of any of its predecessors in regard to the material, mental, and moral progress of mankind and a short review of this progress with some lessons to be learnt from it cannot but be a matter of much interest to practical persons. Over many of us the history, the traditions, and the personal narratives of the past cannot but exercise a potent spell. We can learn from our failures as well as from our successes and these failures may possibly convey to us some notes of warning and act towards us as beacons and signals of danger. As, however, "hope springs eternal in the human breast" and our faith and aspirations are ever forward and to the future, some hopeful prophecy might be expected as to the alleviation, if not the prevention, of mental derangement; but will the lesson of our retrospect justify this anticipation?

The sum-total of the physical, moral, social, and religious energy which has caused our progress during the past century has been unparalleled in the history of man, but action and reaction are always equal and contrary and we shall find that our advance has not been without sacrifices—losses here and retrogression there—and that civilisation itself has not been an unmixed blessing, for in the struggle which has marked our advancement the conflict between intelligence and ignorance has resulted not solely in pure reason and limpid wisdom, but the path of progress has been freely strewn with mental wreckage and physical degeneration.

In the whole range of medical science insanity is, perhaps, of all others the most painfully interesting subject. It is the debatable land of the imagination which presents many subordinate varieties of its wanderings—the dream of the poet, the fable of the mythologist, and the fiction of the romancer being woven with its threads. Insanity, in the excursions of mania with its varieties, its fancied consciousness of unlimited power, its self-satisfaction—that abundant source of mental delight—bestows upon its victims feelings of bliss much more exalted than fall to the lot of sober reason, but insanity in the self-condemnation and misery of melancholia inflicts far severer pangs upon its victims than can be produced by the most extraordinary anxiety and the most acute bodily pains. What are the consequences of insanity? It means in the first place a deprivation of liberty, perhaps a life-long maintenance upon the public purse—already heavily overburdened—a maintenance including housing, clothing, and food which tends each year to rise in cost. In addition to this useless life, or living death, a stigma probably attaches to those who are related to, and are dependent upon, the sufferer, by which they are made to feel the curtailment of the necessaries of life, increasing the liability to a similar breakdown in themselves. Surely, if the possession of reason be the proud attribute of humanity may not such a disease of the reason as insanity be ranked as the greatest affliction and is one not forced to make the study of such a disease which touches society, involves the law and defies medicine, one of deliberate and anxious thought?

What is it that characterises insanity? It is not the presence alone of delusions or hallucinations. There are many persons in daily life who fulfil all their duties and obligations to society and themselves and yet suffer from hallucinations. Insanity, although a perversion of mental functions, is not exclusively an intellectual disorder, for persons gifted with high intelligence may fail to respond to ordinary motives and become so defective in their habits as to be socially unfit to mix in the world. Again, the distribution of mental faculties may be so uneven and mental endowment may be so unbalanced that their possessors are unfit to be at large. There are many persons who are properly incarcerated in asylums, in whom there are merely exaggerations of normal tendencies, fluctuations of the mental faculties which may be described only as excessive or beyond normal limits and which render these persons unstable, untrustworthy, and even dangerous, yet in whom there is hardly, if any, loss of mind. It is only too well known that there are imperceptible gradations as well as abrupt transitions between health—which is the easy, harmonious, and unconscious performance of the organic functions—and disease. Health of mind, like health of body, is a somewhat indefinite expression.

I shall exclude from the subject of this paper senile forms of insanity, the mental decay of involution which results in more or less normal loss of mind, as also the primary defects of idiocy and imbecility which are pathological variations not entirely dependent upon individual stress and which exist in all grades of society and all states of civilisation.

So far as any trustworthy information is to be had it appears that insanity increases as man departs from the savage and semi-civilised states and approaches the highest civilisation. In primitive states of society and among uncivilised races insanity is rare, the pure psychoses are unknown, the chief forms—apart from the low grades, idiocy and imbecility—being associated with the taking of drugs and correspond to the insanities of civilisation resulting from alcohol, ether, cocaine, morphia, &c., and which in the main are curable. Insanities which end in dementia are rare and dementia itself is uncommon, and it is only when we come to higher civilisation that the higher forms of insanity are seen. Diseases, like the physical causes which produce them, have their evolution, their cycles, and their day, and I shall proceed to demonstrate that the progress of mankind has caused a more or less complete change in the type of insanity such as now comes under treatment. As to the causes of insanity, the actual and proximate exciting causes will always be stress of some kind acting upon an organism predisposed to break down, the great predisposition being determined by heredity and by the social environment of the individual, for we know that social relations and obligations constitute the preponderant factor in any mental life. As to heredity we need say no more than that an inherited instability of organisation makes itself evident in the present day more than in any previous period at the physiological crises of life, a hereditary tendency being responsible for more than one-third of all occurring insanity. The tendency of recent years to look upon insanity more as the result of bodily than mental causes is no new view. Haslam, in the early part of last century, classified the causes of insanity and insisted that the disease was never purely mental—that, on the other hand, positive bodily conditions were the causes and that insanity was structural and active in its origin. Earlier writers, however, laid great stress upon a disturbance of the emotions as a cause of insanity, sudden violent affections or the habitual indulgence of any passion whatsoever being looked upon as definite exciting causes. Those whose professions required the exercise of the imagination and the indulgence of the passion, such as the *personnel* of the drama, were said to be peculiarly liable to insanity, but probably some physical factor, such as a dissolute and irregular life, was concerned in causation. Fright, anger, religious terror, grief, ungratified desire, and disappointed pride were specially referred to by those earlier writers as definite causes of insanity. It was pointed out by Pinel that 30 per cent. of all his cases were due to domestic bereavement, 26 per cent. to the events of the Revolution, and 22 per cent. to fanaticism and disappointment in love. It is also an interesting record by Charles Booth[1] that the anxieties and uncertainties of professional life are responsible for the largest proportion of insanity which this class of all others shows. He also points out that loss of trade affecting bodily health is responsible for causing insanity, and that provided wages are regular, although low and there is no nervous strain, there is little tendency to insanity.

As to civilisation, this means progress and it implies a development from the simple to the more complex. When the conditions of life become more specialised the nervous system of man has to react to more stimuli; not only are these more numerous but they are more complicated. For each stage of civilised life a special standard is fixed; the more perfect and the higher the standard the more culture and knowledge are attained and better results obtain in consequence. Highly civilised man thus lives in a more complicated environment, which calls for the higher forms of self-control and more prolonged and varied efforts than are customarily aroused by the simple emotions and the elementary sensorial stimuli of a primitive life. In these efforts numbers of unfortunate ones will not succeed, they are incapable of elevation to this higher plane of civilisation owing to mental, physical, and moral deficiencies. Not having the qualities essential to success they are left behind, evolution proceeding at the expense of the less fit—those, in fact, whom civilisation itself in the struggle renders unfit for the standard it has itself fixed. It is thus seen that civilised society, in forcing the pace, practically manufactures its own unfit—viz., its own paupers, its own lunatics, and its own criminals. London alone in this respect is responsible for the production of over 70 insane

[1] Life and Labour of the People.

persons per week and this number is destined unrelentingly to increase. The only neutralising agency is the fact that sterilisation follows in the wake of three or four generations of town-bred people—a natural law which insures that the unfit shall cease to cumber the earth. Not that civilised life, properly developed, tends in itself to cause insanity, but by implying a more complex mental structure with more delicate parts and nicer construction, this mental machine is more liable to faults of mechanism and varieties of derangement than is the case with the simpler and more vacant minds of primitive people. In cities where the population has to accommodate itself to the pressure of competition the tension of mind is more continuous. There is an increased inhibition from pent-up mental energies which in a primitive life find a ready exit through muscular actions. In cities also artificial desires multiply, unhealthy activities are created, and ambition further forces the overworked brain, which, sooner or later, results probably in its complete breakdown. The wants of modern civilised life are many and are rarely gratified, the eager hand reaches to grasp the prize which is plucked away by some other of the numerous competitors, and bitter disappointment is added to the nervous strain and mental overwork. It is doubtful, however, if mental labour alone is ever an actual cause of insanity, for habitual application of the mind, when not excessive, strengthens it and renders it less liable to disease. Dr. F. W. Mott has shown that the best and most exact nervous reaction takes place when the nerve circle is complete and in a state of healthy tonus or strain. There is no doubt that fatigue is unfavourable to good mental work and by experience we know that fatigue is caused by intense thought. Böerhaave said that unremitting mental attention to a single subject for a whole day once kept him for six weeks without sleep. Bodily fatigue we also know to be demonstrably injurious to thought, for Kraepelin has shown that muscular exhaustion weakens brain power in definite curves and ratios. It is not overwork, however, so much as worry and anxiety which cause insanity. Civilisation, as we all know, brings in its train different effects to different groups of people. To the idle rich it brings sensuous luxuries of all kinds which account for the insanity of those in easy circumstances who are prone to much self-indulgence, who pay over-much attention to personal longings and sensations, and who have too little occupation or whose occupation is irrational and unhealthy. To the poor—the stratum in society which is most prone to insanity—who are at the mercy of every economic fluctuation, it brings lack of proper nutrition, overcrowding with unsuitable hygienic and moral surroundings, and all the other evils and abominations caused by the massing of people in large cities, such as alcoholic and other indulgencies, poverty, and crime, the latter an evil worse than poverty and which bears a very intimate relation to insanity—the instinctive criminal and the morally insane being considered to be identical individuals, characterised by the same psychical and physical stigmata of degeneration. As to overcrowding an immense number of poor people live in small and badly ventilated apartments with filth and squalor in their mean streets and dwellings. Their food is often deficient in quality and quantity, which predisposes them to physical and mental disease. How can vegetables, fish, and milk be fresh and digestible by the time these reach the poor of London where even the cooking for this class is stated on good authority to be worse than in the country. Surely the plainest food with health under a hedgerow must be better than such semi-starvation with the glamour of the city. Overcrowding leads to many and various miseries and personal discomforts which are humiliating and demoralising to the grown up and are a source of moral contamination to their descendents in whom they cause mental and bodily degeneration. All the year round these dwellers of the city are at a disadvantage compared to the country folk. In winter they suffer from cold, want of food and clothing, and in summer they endure a debilitating atmosphere from the reeking odours of dirt, decomposing garbage, and noisome refuse. The disposal of refuse, the sterilisation of milk, the detection of adulterations, and the provision of pure water are great problems which big cities have ever before them. London, probably the healthiest of these, breeds her legions of anæmic, hydrocephalic, and unhealthy children from the want of pure air and radiant light. Crowds of people have their happiness stifled by their environment in our great cities, with the result that they seek to drown their misery and depression in the effects of alcohol. This sedative taken to lull and to veil the little worries, the small pains, and the general mental disturbance of whole classes is the cause of at least a fifth of all insanity occurring in males and more than half this proportion in women—the proportions are probably much higher—and call loudly for definite action and treatment. Such indulgence leads to other sensuous excesses which are all deleterious to nervous centres. There is no doubt that London and, *a fortiori*, other towns produce in the present day a tension of the nervous system as baneful as it is unnatural. One has only to look at the living maelstrom which pours into airless and sunless London offices, workshops, and factories every day from the suburbs to see the strained, eager, earnest, and inwardly preoccupied people who are compelled to sacrifice their health and overstrung nerves in the cause of "civilisation."

Let us briefly contrast the state of civilisation a century ago with what it is to-day and see for ourselves the reason why the stream of progress has been strewn with physical and mental wreckage. Beginning with education the great mass of the people was entirely without it. At Queen Victoria's accession 44 per cent. of the community were unable to read and to write or even to sign their names. Now this proportion is less than 6 per cent. Another great change within the past century has been the migration of the population from rural districts into towns, which has been caused in the main by our present system of education.

In the first year of the reign of Queen Victoria sufficient wheat was grown in the land to feed the people for 11 months in each year, now there is only enough grown to provide the population for two and a half months. Furthermore, the cultivation of the potato—a measure of industrial as well as of arable progress—is declining in this country, where it is only 38 acres per 10,000 persons, as against 161 in Germany and 98 in France. In the year 1800 more persons lived in the country than in the towns, in 1841 the urban total was one half of the whole population, and in 1891 the urban constituted 77 per cent. of the whole population. Such a system of education which drives each year 80,000 persons from the country into the towns and, as Mr. Rider Haggard states, leaves the land without labourers and ploughmen, and which yet causes millions a year to be paid away to the little culturists of the continent for fruit and eggs and over half a million for onions alone, which can so well be grown in this country, is evidently unsuited for rural districts. Not until each local authority can determine what should be taught in each district, as foreshadowed in the new Bill, can any improvement take place. The present system of education is too rigid and the hard-and-fast curriculum of cramming should give way to a minimum of bookwork and a maximum of outdoor instruction so as to train the eye to observe and the hand to work. Shelley's diatribes against the selfish oppression of the people by the landowners and others were doubtless fully justified, but it is a question whether the political franchise has not extended power into the hands of masses of people who are incompetent to grasp issues involving great risks. What is now the condition of the villages, the looms of which were once in active work and where the handicraftsman once throve in patient contentment, feeling joy and pleasure at the performance of work done as well as it could be done? These handicraftsmen have now left for the towns, where they work in small, hot, and ill-ventilated shops and are at the mercy of every trade fluctuation, the curse of drink following on the heels of their uncertain occupations.

Perhaps in no department of human activity has progress been more marked than in that of communication. In the early part of the last century it cost 1*s.* 4*d.* to send a letter 60 miles, and in 1837, when the penny post was established, four letters were sent by each person annually, whereas now 100 letters and two telegrams are sent and a staff of 160,000 is employed exclusively in this department. In 1830 the only railway was from Liverpool to Manchester and at the late Queen's accession in 1837 there were only 110 miles of railway which were opened in spite of prolonged and strenuous opposition. Although steam was used on the Hudson in 1807 it was not until the second year of the reign of Queen Victoria that it was used to cross the Atlantic. A century ago there were no telephones or telegrams, no steam, and no electricity. Means of communication were rude and costly and only the well-to-do could travel, roads were bad, and tolls and turnpikes were frequent. The stage coach was the only conveyance for the many, but life in the open air tended to chivalry and to courtesy. Our ancestors read less than we do, but their reading was of a more solid and enduring character than is ours.

The scarcity of books and the comparative rarity of journals induced readers to master what they read, with the result that they absorbed real nourishing intellectual food. A superficial attention to an ill-digested course of reading dulls and benumbs the intellect. I have had not one but several youths whose insanity was distinctly traceable to the injurious tone of the literature which they indulged in. It is also stated, by those best qualified to give an opinion, that this steeping of our youth in the prurient, exciting, and unreal literature of to-day—a literature that crowns even vice and crime with an illusory halo of glory—has been the principal cause of neglected domestic duties, unhappy homes, and a large percentage of crime, as is frequently testified in the summing-up of our magistrates.

The emancipation of women from unfair and unjust disabilities and the larger measure of education and freedom granted to women have especially marked the last century; but it is a serious assertion that they look with complacency upon the conjunction of an increased marriage-rate and a diminishing birth-rate. It is believed that the idle women of the upper classes (who are more self-indulgent than ever before) regard the immorality of the average man with less aversion and that they bewail the injustice of visiting condign social ostracism and punishment upon women for similar delinquencies. Further, the revolt against domestic service among the lower classes is also to a great measure a reflection of the love of pleasure in high places.

I do not deny that vast improvements have taken place in the social condition of the people in the past century. But what have been the physical and psychical effects of progress upon the nation? In spite of the progress in sanitation—the science of preventive medicine—which concerns the great tripod of life—food, air, and water—and which now forms one of the most important departments of medical education—a science which in the late reign has caused £150,000,000 to be spent in providing pure water alone, which has directed special attention to temperance, to the reduction of mortality (the rate of which has declined from 1 to 23 in 1685 to 1 to 40 in the middle of the century, and at the present day to 1 to 55), and especially to infant mortality, calculated by the proportion of deaths under one year of age to 1000 births, which, according to the Registrar-General's information, was yet higher in 1902 than 1881, and to the protection of adult and child life by special statutes, yet I say that in spite of all these facts the physique of the nation has deteriorated, the deaths from cancer and nervous diseases have absolutely increased, as may be seen from Table I.

TABLE I.—*Showing the Annual Death-rate per 1,000,000 Persons.*

	1861-65.	1886-90.
Cancer	367·8	599·7
Nervous diseases	1546·0	1785·3

Furthermore, out of 1000 consecutive male cases admitted into Claybury Asylum 143 were between the ages of 15 and 25 years inclusive, and these are typical of their class. Table II. gives the actual physique of these 143 persons in weight and height at the respective age period, compared with the averages in the general population at the same ages.

TABLE II.—*Giving the Physique of 143 Persons admitted into Claybury Asylum in Weight and Height at different Age Periods, compared with the Average General Population at the same Ages.*

Number of patients.	Admitted at the age of—	Average height of patients.	Healthy standard of height according to age.	Average weight of patients.	Healthy standard of weight according to age.
		Inches.	Inches.	Pounds.	Pounds.
1	15	56	61	64	103
6	16	61	63	109	117
4	17	64	65¼	117	130
12	18	65	65¼	120	142
16	19	64	65½	122	139
13	20	65	65½	123	138
22	21	66	66	130	145
17	22	64	66¼	130	141
16	23	66	66¼	128	145
20	24	66	66¼	132	145
16	25	64	66¼	127	144

Does not the above point to a physical degeneration in certain strata among a large number of the population for which some cause should be found? I know it is asserted that the growth of the upper classes has increased, but where is the proof of this? Talbot and Kingsley have recently called special attention to the contracted jaws and the poor teeth of town-bred persons, and the attention recently called by the Royal Commissioners on Teaching in Scotland, by the report of the Inspector-General of Recruiting who states that one out of every three persons brought up by the recruiting sergeant is rejected, by the special report of the Director-General of the Army Medical Department, by Sir Lauder Brunton and many others, deserves most careful inquiry and investigation. It is stated that there are at the present day more feeble-minded among the children of the metropolis in proportion to the population than ever existed before, and it is computed that there is one such for every 180 healthy children who requires special educational care and training. Not only is there thus a lowering of physique among town-bred people, but their mental condition is also affected and some remedies should be pointed out towards the more efficient progress of our present system of civilisation.

The cult of athleticism which has become the absorbing passion of Englishmen, old and young, must be looked upon as, on the whole, a corrective of neurotic heredity, but it is not certain whether excessive exercise does not lead to overstrain of the circulatory system for which future generations may have to pay heavy penalties. Already cardiac diseases unknown in the early years of the last century are calling for special methods and institutions for their treatment and cure. The seriousness of high arterial tension is being discusssd on all sides and tonics in the form of phosphorus, arsenic, and strychnia are much more common, as also are cardiac sedatives. In Germany much attention is paid to suitable open-air play places exclusively for children and teachers are appointed to play with them. There is no doubt that physical culture is one of the greatest needs for our young people of to-day. I can speak in high praise of Swedish drill as a successful addition to the treatment of the insane. Its use has been very beneficial in the experience of my colleagues and myself at Claybury. It is a system which connects mental and muscular processes, engages the attention, and insures a more precise and ready reaction to outward stimuli.

What have been the psychical effects of "civilisation"? As regards education the present system has doubtless raised the general intelligence of the community, but it has destroyed individuality, it does not train the eye to see, the hand to work, or the imagination to create. Few men of the first rank now rise from the masses. It is also said by those who know that respect for personal qualities has disappeared and has given place to respect for the longest purse. This adoration of the millionaire demonstrates the craving for luxury and the means to obtain pleasure and it permeates every rank of society. Men now think they have a right to gratify every passion irrespectively of the misery this may involve to those dependent upon them. The question is whether the pendulum has not swung dangerously far in the direction of toleration and whether liberty has not degenerated into licence. Already there are not wanting signs that legislation is being called for to deal with prodigals, spendthrifts, and persons guilty of gross self-indulgence. There is no doubt that to-day altruism has lessened and individual selfishness has greatly increased. Our hospitals languish for lack of funds, charity has never been doled with less liberality, and our great universities—the pride of our country in the Middle Ages—make futile appeals for support. Benevolence, as in past centuries, does not in our day found great institutions for charity, education, and religious devotion. Further, the judicial statistics (1903) show that certain kinds of law-breaking are on the increase, there are more divorces than ever among the upper classes, and the petitions for dissolution of marriages in 1901—the last year reported upon—were higher than in any previous year. Orders made by the Summary Court for judicial separation have increased by 31 per cent. It is only too apparent that there is less general heed paid to marital constancy and the laxity of morals among the "smart set" of women cannot but exercise a baneful influence upon the future morals of this country. Commercial morality has declined, for crimes of embezzlement and betrayal of trust on the part of trustees, managers, secretaries, clerks, and the like, have shown a decided tendency to increase. There is a dearth of sincerity and of men who "run dead straight."

As to the sharp differentiation and subdivisions of workmen into groups, pointed out by Charles Booth, is it now certain that these groups do not hurry to get through their tasks so as to "enjoy themselves" in some banal and senseless amusement and that their work is performed indifferently and without pleasure in contrast to the individual attention from the workmen of former days, who, as stated, showed their joy in work well done? It must not be asserted that when wages are high the people are contented. The reverse is often the case and it would be true to say that there has never been an age more discontented than the present. Socialism, that feeling of the body politic in the aggregate which levels down rather than up and which provides for the many at the expense of the few, tends to the extinction of individual enterprise of every kind. It tolerates, if it does not sanction and encourage, the present state of nearly one-fourth of the wage-earning population who are reported to exist at rates of wages just above starvation and who never rise with, or participate in, the country's prosperity. This socialism is favoured, if not determined, by the fact that the preponderating vote of the elective body decides the policy of the elected body. Under this system, among other developments, a vast amount of municipal indebtedness has been incurred and so serious is this that the president of the Incorporated Association of Municipal and County Engineers (Mr. Weaver) recently called attention to the increase of 216 per cent. in local indebtedness which has taken place during the last quarter of a century and which, to prevent municipal bankruptcy, can only result in the nationalisation of municipal loans. The spirit of chivalry and courtesy already referred to has certainly all but disappeared. The difficulties of travelling in past days made women much more dependent upon men than they are to-day, for travellers in their hurry and scurry to "catch the tube" have no time for courtesies and no occasion for gallantry. On the other hand, women being more free are more addicted to pleasure than they ever were before and they find this in the excitement of gambling, for they have become more the companions of men in sports and pastimes. It is also certain that the women of to-day drink more alcohol than formerly and to a great extent secretly. As to the general question of alcohol, the subject will be dealt with fully in the debates of the section and I shall not further allude to it here.

From what has already been said—and we are much indebted to Mr. James Stanley Little for his records[2]—it is seen that high pressure and a subdivision of labour have evolved a very complicated mental mechanism with every possible liability, therefore, of getting out of order, which has resulted in the appearance of a large variety of mental diseases unknown to the older physicians. We shall see the import of this in our comparison of the diseases of to-day with those of 100 years ago.

It is interesting to note that the first serious legal enactments in our country respecting the care of the insane do not date back farther than the second or third year of the reign of William IV. By the courtesy of the Commissioners in Lunacy I am informed that some statistics date as far back as the reign of Edward II. Possibly the mental infirmity of King George III. gave an impetus to the more enlightened modern treatment of mental diseases which, until about this period, was not only a reproach but also highly reprehensible. Before this reign we have no noteworthy records of asylums other than Bethlem. St. Luke's Hospital had been opened less than ten years, but from 1762 to 1822 we have valuable contributions in regard to mental diseases from Cox of Fishponds,[3] Arnold of Leicester,[4] and Haslam of Bethlem Hospital[5]—an institution in which the skilful and kindly treatment of mental diseases was then, as now, an honour to our land. About the year 1793 we have the work of that great champion of the rights of the insane—viz., Pinel of the Bicêtre translated into English by Davis[6] of Sheffield, a philosopher, a scholar, and a physician. Haslam was the first to describe general paralysis of the insane, a disease which is probably the most highly evolved form of mental breakdown, and at the opposite pole to the primary defects of idiocy and imbecility. General paralysis was then rare, but is now so common that Dr. T. S. Clouston, in his last report of Morningside Asylum, considers it to be in the proportion of 21·7 per cent. for male admissions and 6·7 for female admissions as against 17·3 males and 3·3 females for the whole of the London County asylums. Whether the disuse of mercury as a general therapeutic remedy in our day compared to the frequent salivation for the smallest ailments in the past may have anything to do with this increased prevalence is uncertain and too speculative to be considered here.

There is reason to think that syphilis is more common now than it was a century ago (although the opinion of Sir Alfred Cooper dissents from this view) and it is possible that its dire effects upon the nervous system might be controlled, or modified if not altogether avoided, if these were more generally known or if information respecting the far-reaching effects of syphilis and the nature of the disease were more widely disseminated. The ravages in India among our troops have given rise to loud cries for special protective legislation against contagious diseases of a luetic character and only last year a unanimous resolution was conveyed from the section of Psychological Medicine of this association urging the attention of the Government and public bodies to the horrible results of this disease, but our statesmen are timid about the health of the people when fanatics, faddists, conscientious objectors, and other irresponsible agitators begin to make political capital out of the "moral" question. It is not too much to say that the more highly developed a race becomes the more cases of general paralysis and other forms of insanity due to the same cause will occur, and it is not too much to infer that the diseases named are preventible and should be prevented. Haslam refers, before the year 1800, to the disease described as dementia præcox, then so rare but now so common that it may almost be described as the scourge of our asylums, for it attacks prematurely our most promising youth, it is practically incurable, and helps to fill our asylums of the future with the hopelessly insane. It is of all forms the one caused by overstrain and the mental rather than the manual worker is subject to its ravages; also, as stated, the great majority never recover from it. This is Haslam's description of it in 1800: "A species of insanity sometimes occurring about the time of puberty, especially in those who have possessed a good capacity and a lively disposition and in females more frequently than males, their faculties are gradually obliterated until they are at last complete and incurable idiots." That which was then occasional may now be described as having become a common variety of insanity among our promising and educated youth.

Haslam reported prior to 1806 upon the treatment of 8874 cases of insanity (4042 males and 4832 females) in the second Bethlem Hospital, built in Moorfields in 1676, and the result of 46 years' experience. The maniacal form of insanity was then more common. Those were the days when men were content and the nation had faith in its destiny. In the *Times* of July 11th, 1803, was published a war song in which, after inviting the consul-king to attack us, it proceeds:—

> ". . . . . that Britons
> Can fearless still maintain their stand,
> And single-handed crush the pride of France."

All classes then bore the necessary hardship of high taxation with resignation and without discontent.

As to the recovery-rate, Haslam states that his own among cases of mania was 67 per cent. Last year in all the asylums of London the recovery-rate from all cases of mania amounted to 38·4 per cent. There were few insane in those days but those which occurred were acute and curable. Not until Jan. 1st, 1859, was the number of lunatics officially registered in this country. At that date there were 36,762 insane persons, a proportion to the population of 1 to 536. To-day they number over 113,964, a proportion to the population of 1 to every 293, and the tendency of much of the insanity which comes under treatment to-day is to end in dementia and to become incurable. Even a quarter of a century ago the type of insanity was different from that of to-day. There is an increased tendency to melancholia which is less recoverable than mania, being probably a deeper reduction of nerve elements than occurs in mania. Melancholia has shown a considerable rise among the educated and private class of the insane, and I am stating a fact and not an opinion when I say that recovery

[2] Progress of the British Empire in the Nineteenth Century.
[3] Cox: Practical Observations on Insanity, second edition, 8vo, London, 1806.
[4] Arnold: On the Management of the Insane, 8vo., London, 1809.
[5] Observations on Madness and Melancholy, by John Haslam of Pembroke Hall, Cambridge, Apothecary to Bethlem Hospital, 8vo, London, 1809.
[6] Pinel's Treatise on Insanity, translated by Dr. Davis, 8vo, Sheffield, 1806.

may be complete after a sharp attack of mania, whereas this is rarely the case after melancholia, more especially in men. This supports the opinion of the earlier physicians that "furious insanity is much more curable than melancholy madness," both Haslam and Pinel having recorded this observation.

Of all the 9267 patients (4096 males and 5171 females) who have been under treatment in the Claybury Asylum since its opening—a period of ten years—and of whom I have direct personal experience and record, 1132 males and 1625 females recovered, a percentage of 27 males and 31 females. Of the 8874 at Bethlem Hospital (4042 males and 4832 females) referred to above and under treatment over 100 years ago 1155 men and 1402 women recovered, a proportion of 27 per cent. for the men and 29 per cent. for the women, an improvement in the recovery-rate of to-day of just over 1 per cent., in spite of all the means of treatment which a century's progress in applied art and the sciences has placed at our disposal. Surely there must be some other explanation than the failure of modern therapeutic means. May not this be discovered in the changed type already referred to and incident to our civilisation?

If a comparison is made between the reports of the Commissioners in Lunacy for the years 1878 and 1902—a period of 25 years—which, as stated, is within my experience, a reduction is seen in the percentages of all cases of acute insanity recorded, a decrease from 75·3 to 70·9 per cent., and further, as cases of *dementia præcox* or premature dementia in young persons—already referred to—were not recorded in the statistics of 1878 and they almost invariably commence in depression, it is justifiable to conclude that they were classed as melancholia, which has risen from 21 5 per cent. in 1878 to 27·9 per cent. in 1902, the reduction in cases of mania in these years being from 53·8 per cent to 43 per cent. The age periods in the statistics of these Blue-book reports are not given but the calculations ascertained are absolutely confirmatory of the statements which I have made. As to the recovery-rate the Blue-book for 1878 gives it for males as 34·81 per cent. and for females as 42 84 per cent., an average total of 38·84 per cent.; whereas, for the year 1902 the recovery-rate is given as 34 4 per cent. for males and 39·7 per cent. for females, an average total of 37·1 per cent., an actual decrease in the recovery-rate for the first and last of the 25 years under review.

With the progress of civilisation, therefore, not only is insanity on the increase, but the occurring varieties are less curable, the physique of the town-dwelling section of the population has deteriorated both in height and weight, and the statistics of recovery are less favourable to-day than they were 25 years ago. Serious as this may appear, while such a state exists one can neither hope for nor expect relief from the great financial and economic burden of providing accommodation for the insane in the future. If relief is to come it will be in some great change affecting the physical as well as the mental health of the masses of the people—a foreshadowing of which is beyond the scope of this paper.

There is yet one factor in the psychical condition of the people which affords opportunities for high ideals, which kindles a spirit of sympathy, devotion, and fervour even among the roughest characters and in the most crowded areas of our cities—I refer to the effect of spiritual influence. In an assembly such as ours I touch upon it with extreme diffidence, but it is an element in human character for which even the Prime Minister has recently appealed, and the life of Father Dolling, the work of such institutions as the Salvation and the Church Armies, testify to its influence over the mental and moral character of those hopeless persons who become the deposit of our civilisation. The indifference of the great bulk of the people to this aspect of life is a matter of common knowledge and an interesting contrast has been recently furnished in the July number of the *Edinburgh Review*. At the present time there are in London alone over 700,000 young men between the ages of 16 and 21 years—and mostly sons of working men—who need special guidance and training. It is not improbable that "hooliganism" and other forms of social outbursts might be much modified through an influence from this direction. Everything points to the strong and immediate necessity for preventing the extension of this lowered mental and physical vigour. Our zeal energy, and skill should be directed to assist a more healthy adjustment of the mind of man to his ever-varying and progressively complicated environment.

PERNICIOUS ANÆMIA FOLLOWING PARTURITION.

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DURING the early months of 1902 there were under observation in the wards of Leith Hospital a number of cases of anæmia following labour. In all but two the anæmia was simple in type and the condition was relieved by the administration of iron over a period of three or four weeks. Two of the cases, however, terminated fatally and from the general symptoms, the condition of the blood, and the result of a post-mortem examination of one of them the conclusion was arrived at that in these two we had to deal with an anæmia of the progressive pernicious type. Both cases occurred in comparatively young women, aged respectively 29 and 31 years, and in both the condition either immediately followed labour or was very much aggravated by it so that a fatal termination occurred within a short time.

CASE 1.—The patient, a married woman, aged 29 years, was admitted to Leith Hospital in March, 1902, under the care of Dr. Elder. She complained of general weakness and had been ill for four weeks. Her family history was good. She lived in a comfortable home and had been married four years and had had three children. The labours were easy and in none of them had there been post-partum hæmorrhage. During her last pregnancy she had not felt in her usual health but was able to be about and to do her housework. For 14 days before labour she had been troubled with vomiting. The labour, which took place four weeks before admission, was normal. The sickness stopped after it and for ten days she felt quite well. On the eleventh day she had one or two shivering fits. These recurred daily for about ten days. The right breast suppurated, discharged for a few days, and then healed up. Ten days after labour she herself noticed that she was becoming yellowish in the skin and pale. General weakness set in and the pallor increased. She came for advice to the out patient department and was admitted to the ward on March 15th.

On admission the patient was very weak and unable to stand on her feet for more than a few minutes at a time. She was very pale and not well nourished, but said she had always been thin and wiry. The lips were almost colourless. The teeth were very bad and the tongue was pale and dry. The appetite was poor but previously to the present illness the patient said that she had had no stomach troubles. She had been habitually constipated. On examination of the abdomen there was no tenderness. The stomach was not enlarged and the liver dulness was normal. The apex beat was faint and the pulsation was diffuse. The usual hæmic murmur was present at the base with a *bruit de diable* in the neck. The pulse was 120, regular, and of low tension. The urine was highly coloured and scanty. There were no abnormal constituents. The respiratory and nervous systems were healthy and the reproductive system was as stated above.

A drop of blood was obtained with difficulty from the ear and the thumb. It was very serous and on cover-glass films it looked almost colourless. The analysis of the blood gave the following result: hæmoglobin, 20 per cent; red blood corpuscles, 1,100,000 per cubic millimetre; and white blood corpuscles, 6000 per cubic millimetre. Film preparations stained with the triacid mixture had the following characteristics. The red cells showed great differences in size and over 30 per cent of them were megalocytes. Most of the megalocytes had increased hæmoglobin content and were opaque. Poikilocytosis was present chiefly in the form of oval- and pear-shaped cells but was not so marked as the degree of anæmia would have led one to expect. Nucleated red cells were fairly numerous, the majority being megaloblasts. Over 60 were counted in three very thin films. Three or four of the megaloblasts in each field were giant cells. Mitotic division was seen in one nucleus. In most of the megaloblasts the protoplasm stained a dark-brown with the triacid mixture. A few myelocytes of large size were seen in each

field. The last examination before death showed an increased number of megaloblasts and a marked ante-mortem leucocytosis.

The patient lived for only seven days after admission to the hospital. She gradually became paler and very weak. The temperature rose on the second day after admission and remained at about 102° F. till death. For two or three days before death the patient complained of pain in the abdomen and had some sickness and diarrhœa. No post-mortem examination was made.

CASE 2.—The patient, a married woman, aged 31 years, was admitted to Leith Hospital on Feb. 11th, 1902. She complained of general weakness of nine weeks' duration. Her family history was good and she had a comfortable home. She had enjoyed good health up to three years previously. Almost immediately after marriage she had an attack of influenza from which she made a slow recovery. Two years and three months before admission her first child was born. Labour was prolonged, lasting for four days. The forceps was used, the perineum was torn, and there was considerable post-partum hæmorrhage. She was very ill for 14 days and then improved slowly, but was an invalid for quite three months. She nursed her child all the time and continued to do so for 13 months. Her second child was born nine weeks before admission. She was quite well all through the pregnancy. Her labour was instrumental and there was no post-partum hæmorrhage. She was in bed for ten days but though she got up after this she was never again able to work. During the first week of the puerperium she suffered from ulceration of the tongue and throat. About 14 days after the birth of the child she noticed that she was becoming very pale. About this time also she was troubled with vomiting and diarrhœa which under treatment were relieved. As the weakness was increasing she came into Leith Hospital.

On admission her lips were very pale and her teeth were very bad, especially the upper set, consisting as they did of a row of decayed roots, not one sound tooth being present. The appetite was good. She had no history of stomach troubles. Constipation had been habitual. She had suffered from palpitation and breathlessness since the child was born. The apex beat was weak and pulsation was diffused. A hæmic murmur was present at the base. The pulse was 112 per minute, irregular in time and force, and of low tension. There were signs of consolidation at the right apex. The urinary and reproductive systems were healthy. There were no enlarged glands and the spleen was not enlarged. The blood was very thin and pale and a count gave the following result: hæmoglobin, 20 per cent.; red blood corpuscles, 550,000 per cubic millimetre; and white blood corpuscles, 5000 per cubic millimetre. Films were stained with Ehrlich's triacid mixture. Marked differences in size were observed and a large number of megalocytes were present, the majority of them being stained polychromatophilically. Most of the cells were misshapen, oval cells predominating. Erythroblasts were present in considerable numbers; nearly all were megaloblasts, which in a count of five films averaged 150 per cubic millimetre. A few myelocytes were found in each film. A blood count on Feb. 21st resulted as follows: hæmoglobin, 10 per cent.; red blood corpuscles, 400,000 per cubic millimetre; and white blood corpuscles, 3000 per cubic millimetre. For a few days after admission the patient said that she felt a little better. She, however, got gradually weaker and died on Feb. 22nd, 11 days after admission. For 24 hours before death she complained of severe abdominal pain.

Necropsy.—At the post-mortem examination there was general pallor of all the organs. A few tuberculous nodules were present in the apex of the right lung. The heart was very pale; it contained a considerable quantity of fluid blood and beneath the pericardium were many small irregular hæmorrhages. The spleen was purplish in colour, of firm consistence, and showed thickened trabeculæ. Microscopic examination showed few or no iron granules. The medulla of the suprarenals was very small. The alimentary canal showed no naked eye lesions. The bone marrow of the humerus and femur was examined and found to be red throughout. Smears were examined microscopically from the bone marrow, the liver, and the spleen. The bone marrow showed megaloblastic degeneration. Normal red cells were present, as were also numerous erythroblasts, almost all of which were megaloblasts and gigantoblasts. The white cells were mostly large, mononuclear, and non-granular. The liver was very pale and fatty and also had a mottled appearance. Sections under the microscope showed a large quantity of pigment in the liver cells consisting of yellow granules uniformly distributed and deposited in the outer two-thirds of the lobules. Ferrocyanide of potassium and diluted hydrochloric acid showed the pigment to be free iron. The spleen showed no excess of iron. There was no deposit of iron in the tubules of the kidney which, however, showed desquamative nephritis. (May this absence of iron from the kidneys not be explained by the nephritis impairing the excretory action of the kidney cells?)

Remarks.—That anæmia following parturition occurs with considerable frequency is well recognised. There is usually at the same time some causal factor—either small but repeated losses of blood during pregnancy or a more or less severe post-partum hæmorrhage—which amply accounts for the condition. The result, too, is favourable and most cases are relieved in a few weeks' time. In none of these, however serious the loss of blood may be, does one ever get a picture which is anything more than that of a severe secondary anæmia. It is extremely difficult in face of the most recent investigations into the causation of anæmia of the progressive pernicious type, attempting as they do to include that disease among chronic infective troubles, to assign to pregnancy and parturition their share, if any, in the production or even aggravation of such a condition. Earlier observers in their etiological classification of anæmias of the progressive pernicious type almost always included pregnancy and parturition as factors in a considerable number of their cases. Eichhorst in his etiological grouping includes under secondary pernicious anæmia 29 cases in which pregnancy and child-birth were the causal factors. Osler in his 27 cases includes five which followed parturition and in which an anæmia developed not to be distinguished from idiopathic pernicious anæmia. Of late years, however, not only have reported cases of pernicious anæmia following pregnancy and parturition been very infrequent, but by writers they have been excluded as etiologically having no influence in the origin of the disease.[1]

Ewing in his book on the "Clinical Pathology of the Blood" refers to the gradual disappearance from literature of cases of pernicious anæmia following pregnancy, mentioning that Ehrlich could find only one case in recent literature—one under the care of Laache recorded in 1883. Ewing himself at Sloane Maternity Hospital from 1892 to 1899 saw many cases of severe anæmia but none of the progressive pernicious type. He concludes that the "rather numerous current reports of severe anæmia following pregnancy refer to a secondary type of anæmia." Pregnancy therefore has no specific influence in the origin of the disease and the veritable cases which follow parturition are probably "referable to hæmorrhage and various unhygienic conditions."

It is very doubtful indeed if even the most severe secondary anæmia ever passes over to the pernicious type. In the two cases above recorded a typical anæmia of the progressive pernicious type was present in each, as evidenced by the reports of the blood examinations and the post-mortem examination held on one of them, and, further, we could absolutely exclude such conditions as hæmorrhage or unhygienic surroundings as in any way having been causal factors in the production of the anæmia. In both cases we found, as far as could be ascertained, two healthy women up to the date of their last pregnancies. During the course of the pregnancy there was only a history in one of them of some slight ill health, as compared with her previous condition. She was always able to be about and to do ordinary household duties. In both also we found after labour, without post-partum hæmorrhage, a sudden onset of a rapidly progressive anæmia, terminating fatally in one case in five weeks and in the other in ten and a half weeks. It is, of course, impossible exactly to fix the date of onset of the anæmia, but it is more than probable that in both the condition which underlies the production of such an anæmia did not begin to operate till after labour and this sudden onset, combined with the rapidly fatal termination, would seem to indicate some relationship between the anæmia and parturition in both cases. Dr. Hunter in his work on "Pernicious Anæmia" associates a chronic infective gastro-enteritis, following on decaying teeth, with the etiology of the disease. It is curious that in both these cases and more particularly in Case 2 we found a very bad condition of the teeth present, without being able to obtain any history of chronic gastric

[1] This paper was written before the appearance of Dr. W. Hunter's recent contributions to THE LANCET, Jan. 31st (p. 283) and Feb. 7th (p. 367), 1903.

or intestinal troubles in either. That they may have existed, have been slight, and so difficult to elicit we have to admit. Both these cases would then be looked on as etiologically following Dr. Hunter's classification. In Case 2 in which a post-mortem examination was made, the stomach and intestines were reported to be healthy, but even if still we admit the gastro-intestinal tract as the site of the infection, such a causation fails to account satisfactorily for the very sudden onset or aggravation of the condition after parturition. From the group of idiopathic pernicious anæmias we now know have to be separated cases which, both in the condition of the blood and in the state of the organs post mortem, give a typical picture of pernicious anæmia and can be explained etiologically by the presence in the alimentary canal of bothriocephalus latus and ankylostoma duodenale. In these cases the hæmolytic changes in the blood are probably the result of a specific toxin. For some days before death both in a degree, but more especially the patient in Case 1, showed toxæmic symptoms, as evidenced by the considerable elevation of temperature with some vomiting and diarrhœa. In these two cases and in others following parturition may not the hæmolysis similarly result from toxic products thrown into the blood after parturition, or if the condition be already present during or before pregnancy may not an aggravation of the already existing pernicious anæmia be produced by substances which chemically favour hæmolysis?

A CASE OF SEPTICÆMIA.[1]

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THE following case deserves to be reported as well for the interesting group of symptoms presented as for its bearing on the question of the efficacy of antistreptococcic serum.

On May 5th, 1903, I was called to see a woman, aged 21 years, complaining of headache, pains in the joints and muscles, and an eruption on the legs. A fortnight previously she had sustained an injury to the right great toe which in the course of a week had led to a gathering beneath the nail and a swelling in the groin. With the appearance of the swelling, pains developed in the joints and muscles. On two occasions the patient had shivering fits, lasting on each occasion for a couple of minutes. The rash was noticed on the twelfth day from the injury. Though feeling very ill and wretched the patient continued at her household work until the day before my visit, when after vomiting twice she broke down and took to her bed.

On examination the patient was flushed and breathing heavily. The eyes were somewhat bloodshot and the lips were covered with sordes. The tongue was dry, furred, and tremulous. The inside of the cheeks, the fauces, and the pharynx were swollen and of a dusky red colour. The temperature was 104° F. and the pulse was 100. The heart sounds were normal and the respiratory sounds, except for an occasional râle, were healthy. There were no evidences of abdominal disease.

The nail of the great toe was raised from the matrix by a collection of fluid which on incision proved to be turbid serum with a single drop of pus towards the end. The swelling in the groin consisted of a mass of inflamed femoral glands, tender to the touch but without sign of suppuration. The most interesting point, however, at this stage of the case was the variety of skin lesions presented. On the face were groups of herpetic vesicles in five different situations—viz., on the forehead, on the upper and lower lips, and on both lower eyelids. On the trunk and limbs were numbers of pustules grouped most thickly around the folds of the groins, armpits, and knees, and on the legs from the knees downwards. In this last situation but confined to the front and sides of the limbs a number of raised patches were seen, very tender and of a purplish-red colour which faded gradually into the surrounding skin—in fact, presenting the typical appearance of erythema nodosum. At this stage the arms were free from these erythematous patches but subsequently one did make its appearance over the left ulna. Subsequently, too, a scarlatiniform rash appeared on the dorsum of each foot and on those parts of the legs which were not already occupied by the pustules and erythematous nodules. This scarlatiniform rash, having persisted a single day in its original form, became purulent by the development of a thin but almost continuous layer of pus beneath the cuticle.

Having regard to the focus of suppuration and the implication of the femoral glands the presumption in diagnosis was in favour of a septicæmic process, but in the presence of erythema nodosum and joint pains I thought it better to exclude simple acute rheumatism by administering a short course of salicylates and accordingly the patient was in the first instance placed on ten-grain doses of salicylate of soda every three hours. This had no effect on her general condition. On the next day the temperature had risen one degree and the pulse had increased to 128. A loud systolic murmur was now for the first time audible, heard best over the mitral area and traceable to the axilla. A specimen of blood reacted negatively to the Widal test but showed an increase in the number of white corpuscles. A culture was made and gave a growth of staphylococci and diplococci. The presence of two distinct organisms was, of course, suspicious of an artificial inoculation of the culture, but a second specimen taken with most elaborate precautions having come to grief diagnosis had to be based mainly on the symptoms.

For the first four days subsequent to coming under observation the patient became gradually worse. On the fourth day on auscultation the cardiac murmur might be heard to alter its character from time to time, being at one moment soft and blowing and at another quite loud and harsh and obviously non-functional in character. The respiratory sounds had now assumed a peculiar character; both inspiration and expiration were prolonged and noisy, simulating to some extent bronchial breathing. Towards the evening of that (the fourth) day the scarlatiniform rash already referred to appeared and also additional clusters of herpes on both upper eyelids. Though no streptococci had been found in the blood I determined to try the effect of antistreptococcic serum and at 9 P.M. 10 cubic centimetres were injected. In the course of the night the temperature fell two and a half degrees and the patient felt easier. On the next morning from 6 A.M., to 10 A.M. it again rose and at 1 P.M. another 10 cubic centimetres of the serum were injected. The temperature again fell, but only to rise again to its former height after about 12 hours. The injections were continued twice daily with like result till May 12th and then once daily till the 14th, when the temperature was normal and showed no disposition to rise. The other symptoms progressively diminished in severity and the various skin lesions cleared up. The cardiac murmur continued quite loud till May 21st, when it, too, began to grow faint and by the 28th it had completely disappeared and has not since returned.

There are many points of interest in the case. As regards the nature of the fluid evacuated from the seat of the primary lesion, I have mentioned above that it consisted of turbid serum (there had been no initial blood effusion) followed by a drop of pus. I have often noticed in inflammatory conditions of the extremities that when the contents of the abscess are thin and serous rather than creamy and purulent the local and constitutional symptoms tend to be more severe.

As to the skin lesions, the occurrence of erythema nodosum is unusual in such cases. Erythema multiforme, with sharply defined outlines, is a commoner phenomenon. Since treating this case, however, I have read a report of a case of septicæmia by Sir Dyce Duckworth in which he noted the occurrence of typical erythema nodosum. The distribution of the facial herpes was in my experience unique. I have frequently seen a greater number of vesicles and sometimes a wider area of the face involved, but never a distribution over so many different branches of the nerve. Seven in all were affected.

There can be little doubt that the abnormal heart sounds which developed while the patient was under observation were due to acute endocarditis and the manner in which this condition cleared up was a source of great satisfaction to all parties concerned. But the result is in keeping with what we know of such cases. As a general rule, if the patient survives at all he does so with a sound heart, thus contrasting favourably in one respect with rheumatic endocarditis and its high percentage of permanent heart lesions.

As regards treatment, the effect of each injection was so

[1] A paper read before the Fylde Medical Society on June 30th, 1903.

marked and so uniform that recovery may fairly be attributed to the serum. Of late the reputation of this preparation has been on the wane, many writers denying that it is ever effective. In my humble judgment it is effective and the present case, in which no streptococci were found, suggests the idea that its efficiency may not be limited to those cases where the infection is due to the particular strain of organism used in producing the serum.

Blackpool.

CICATRICIAL CONSTRICTION OF THE ABDOMINAL WALL AND OF THE LEFT THIGH ATTRIBUTED TO COMPRESSION BY THE UMBILICAL CORD.

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THE unusual conditions existing in this case[1] are clearly displayed in the accompanying illustrations (see Figs. 1 and 2). As is shown in the figures there is a narrow cicatricial band forming a complete girdle of constriction in the abdominal wall. This occurs on the posterior aspect of the body at the level of the third lumbar spine; on each side it passes forwards and slightly downwards just above the iliac crest and the circle is concluded in front at a point one and a quarter inches below the umbilicus. The cicatrix appears to involve only the superficial part of the skin but it grips the abdominal wall to such an extent that it produces a groove which in the anterior part is depressed from a quarter to half an inch below the surface. Behind there is some appearance of a double groove but this cannot be traced in the lateral and anterior parts of the circle. The lower part of the left thigh also shows a depression or furrow placed obliquely immediately above the knee. The skin here betrays no distinctly cicatricial change and the constriction is much less acute than that in the abdominal wall. These conditions have without doubt been present from birth. Unfortunately it has not been possible to trace the practitioner who was in attendance when the child was born—she is now ten years of age—and therefore expert testimony in reference to the then existing facts is not available. But according to the mother's statement, delivery took place at the seventh month and the grooves on the abdominal wall and thigh were occupied by the umbilical cord. The same witness credits the medical man with the remark that "had the pregnancy gone to full time the child would have been cut into three parts."

The chief feature of interest in the case is the question of the agency by which the grooves in the abdominal wall and thigh were produced. It may be assumed that at the time of birth these depressions were certainly occupied by the umbilical cord, because, apart from the mother's statement as quoted above, other cases have been recorded in which a loop of the cord has been found in somewhat similar constrictions, at least in the case of the limbs. Thus it may be fairly argued that there is a *primâ-facie* case in favour of the umbilical cord as the constricting agent. But the evidence is not quite conclusive, for it must be allowed that given, during intra-uterine life, the formation of grooves upon the surface from any cause whatsoever, the mechanical conditions are such as would lead more or less readily to the reception and retention of the umbilical cord within such depressions. It is therefore possible that occupancy by the cord may be not the cause but the consequence of these constrictions. Hence it must be considered whether there is any other feasible constricting agent. First of all in this respect comes the possibility of bands of tissue taking origin in connexion with the formation of the amnion. These are usually regarded as agents which may lead to intra-uterine amputation of the digits or limbs and some instances have been recorded in which they have been found actually constricting these parts. All that can be said in the present case is that there is no evidence of the existence or action of such bands. In the second place there is the suggestion that constrictions and amputations of the limbs occurring during intra-uterine life are due, not to some external agent, but to a trophic or sclerodermic lesion which, whilst primarily affecting the skin, cuts its way, as it were, more or less deeply, and, in the most extreme instances, causes strangulation or even separation of the distal part. Dr. J. W. Ballantyne, who discusses this question in his latest work on "Antenatal Pathology," considers that "no satisfactory explanation of the production of the so-called spontaneous amputations has yet been advanced." In view of so authoritative a statement some reserve in the expression of an opinion is necessary, but it may be permitted to suggest that in the present instance there are facts which support the view that here at all events the umbilical cord is responsible for the existing conditions. Such facts are found more particularly in connexion with the groove on the left thigh. This, it will be observed, has not a circular but a spiral direction and form. Now whilst it may be conceivable that a trophic or sclerodermic lesion may produce a circular constriction of a digit or limb, it is less easy to imagine an oblique or spiral groove, such as is here represented, to be the result of such a lesion. Further, the skin forming the floor of this groove, though perhaps

FIG. 1.

Front view.

[1] The patient was shown before the Society for the Study of Diseases in Children in November, 1902.

somewhat atrophic, is apparently normal in every other respect; the appearances are just what might be expected from prolonged compression by a broad, smooth ligature. Add to these facts the further fact (as it may be assumed to be) that the cord was found in the groove at the time of the child's birth, and the evidence supporting the theory that the cord is responsible for the existence of the groove is, it must be admitted, very strong, if not actually conclusive. But if this view holds good in reference to the thigh it must apply with almost equal force to the constriction of the abdominal wall. It is only necessary to suppose a greater degree of tension to explain both the more marked depression and the definite cicatricial change. This hypothesis also accommodates itself to the appearance of a double groove on the posterior wall of the abdomen with the existence of a single furrow in the rest of the circle, for in the former position the firm structure of the wall opposes a deep depression and thus a limited play of the cord from one level to another becomes possible, whereas the yielding nature of the lateral and anterior abdominal walls favours the ready formation of a deep and narrow furrow along the line of which the compressing action of a tense cord would be continuous.

FIG. 2.

Back view.

Such a conclusion bears upon the question of the causation of intra-uterine amputations. That the agency producing these is identical with that producing constrictions of the limbs is fairly certain, for in addition to the common sense presumption that amputation is merely constriction carried to an extreme degree, there is the observation that both conditions may be present in one and the same child. An example of this association was recently shown at the Polyclinic, the case being that of an infant born minus several fingers and with a deep constricting groove around one leg. But if intra-uterine amputations are, or may be, due to the same cause as that which produces constrictions of the limbs, and if, as is rendered in the highest degree probable from the present case, such constrictions may be caused by the umbilical cord acting as a constricting agent, it follows that intra-uterine amputations may also be accomplished by the cord or other band external to the body of the fœtus. Hence the present case may be advanced as a contribution to the discussion of the mechanism of intra-uterine amputations and its influence goes to prove that such amputations are caused by extra-fœtal bands constricting in an extreme fashion the affected part. The argument in brief, therefore, is that intra-uterine amputations and constrictions of the limbs are produced by one and the same agency; that, as is here shown, such constrictions may be caused by an external constricting band, in this instance the umbilical cord; and that consequently such bands must be held responsible for the occurrence of intra-uterine amputations.

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OBSERVATIONS ON MASTICATION.

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IV.[1]

MEANS OF INSURING ADEQUATE MASTICATION.

IN order to secure the full advantages accruing from the use of the jaws and their appendages it is above all necessary for them to be adequately exercised during the period of development. If this is done not only will the tendency to dental caries, adenoids, indigestion, and other evils be greatly diminished, but the masticatory instinct will establish itself as a permanent force, so that the individual will tend for the rest of his life to subject even soft foods to thorough mastication. The tongue, the lips, and the jaws of the newly-born child find their natural exercise at the mother's breast and we should, therefore, do our utmost to get the mother to suckle her child, the bottle affording neither the same kind nor the same amount of exercise. If, unhappily, we fail in this we must see that the teat of the feeding-bottle is so constructed as to compel the child to earn his meal by, at any rate, some exercise. This kind of exercise promotes the growth of the tongue and thus of the jaws, especially of the mandible. Directly the infant shows a disposition to bite hard things the instinct should be gratified. We may observe a tendency in this direction as early as the third or fourth month and it becomes more and more pronounced when, the time for the eruption of the teeth approaching, the gums begin to swell up and to get tender and saliva begins to flow from the mouth; it is now more than ever necessary to provide the child with hard substances on which to exercise the jaws and the gums, and a great deal of the trouble of teething is due to the failure to recognise this fact. What, then, are we to employ for this purpose? I am convinced that it is a mistake to rely solely, or even mainly, upon baubles of ivory, coral, and the like, useful though these may be in their way; it is far better to give the child something which is not only hard but nutrient and pleasant to the taste, something which will at one and the same time exercise the maxillary apparatus, excite the gustatory organs, and provide a certain amount of nutriment. To this end we may as the teething time approaches give a chop or chicken bone from which most of the meat has been removed; by powdering the bone with white sugar or salt we may increase its attractiveness. From such bones a good deal of nutriment can be extracted, and this of a kind which is most acceptable to the infant stomach, for it must be remembered that the young human is in the main carnivorous. Indeed, since milk is a purely animal diet all the mammals must be regarded as essentially carnivorous during the period of suckling, while man, as already observed, from the time

[1] Nos. I., II., and III. were published in THE LANCET of July 11th (p. 84), 18th (p. 150), and 25th (p. 216), 1903, respectively.

he emerged from the anthropoid until he learned to cook his food, was throughout life mainly an animal feeder. Therefore we should not hesitate to allow the teething infant animal food in the form suggested. Chicken and chop bones, yielding as they do before the pressure on the gums, are, moreover, just of the right degree of consistence for the purpose in view, while they afford abundant exercise for the tongue; ivory, coral, and the like are, on the other hand, too hard and unyielding and lack, moreover, the attractiveness belonging to sapidity.

By thus providing the maxillary apparatus with suitable exercise we shall do much to facilitate the eruption of the teeth and to favour the growth of the jaws and their appendages, including the salivary glands, and so to prepare the mouth for the reception of vegetable food. This should, of course, not be given till the teeth appear. The order in which these make their appearance gives some indication as to the order in which vegetable food should be administered to the child. The first teeth to penetrate the gums are the lower incisors which appear from the seventh to the eighth month; then follow the upper incisors from the seventh to the tenth month. These teeth enable the child to *bite*, but not, be it observed, to *masticate*, for which function the molars are necessary. Now the first molars do not appear till the twelfth or fourteenth month, the second molars not till between the fourteenth and the twentieth month, and it seems to me certain that our primitive ancestors could not have obtained starch in any quantity until they reached this age; at the best, pre-cooking man was but scantily supplied with starch, and such slender supply as he had could only be rendered accessible to the digestive juices by vigorous mastication which broke up the indigestible cellulose framework in which all vegetable starch is contained; hence until the young human cut his molars he had little opportunity of securing any starch. These considerations strongly suggest the desirability of giving but small quantities of starch before the twelfth month, and though the facts that ptyaline appears in the saliva about the time the first incisors are cut and that pancreatic juice develops its amylolytic ferment at the same time show that the digestive organs are ready for the reception of some starch at the seventh or eighth month, yet I believe the quantity should be strictly limited. I am ready to admit that the modern child may have, indeed probably has, a greater power of digesting starch than his remote pre-agricultural ancestor, but even so I am convinced that we should be on our guard not to over-gorge infants with this substance. Only a small quantity should be given before the twelfth month and it should be gradually increased up to the twentieth month.

I have said that the pre-agricultural infant was unable to secure starch in any quantity by means of his incisors. These teeth enabled him, however, to obtain some soluble nutriment from fruits and Dr. Sim Wallace has suggested that the early eruption of the lower incisors is for the purpose of enabling the infant to pierce the outer covering of fruits so as to permit him to extract the soluble contents by suction; and accordingly when these teeth are cut we may allow the child to bite at such vegetable substances as apples, oranges, and sugar cane. The latter is a useful article of diet for children, for it provides soluble saccharide in a diluted form and it is advisable that the child should receive his cane sugar well diluted, for it must be remembered that before the agricultural period man's supply of pure sugar was limited to wild honey which, consisting as it does almost entirely of mono-saccharide (grape sugar and fruit sugar), is very easily disposed of by the digestive organs. Nowadays the less digestible cane sugar (which is a di-saccharide) is very largely consumed in the undiluted state, in which it is apt to set up disturbance. When, however, it is obtained by chewing the sugar cane it is diluted both by the water in the cane and by the saliva and I should like to see children obtain most of their cane sugar in this way.

The consideration of the conditions obtaining for pre-agricultural man not only strongly suggests that the young human of to-day should be given starch in very moderate quantities up to the twelfth month, but it points an even more important lesson—viz., that this substance should be given *not, as is the custom, as liquid or pap but in a form compelling vigorous mastication*, for it is certain that early man from the time he emerged from the ape till he discovered how to cook his vegetable food obtained practically all his starch in such a form; it cannot too often be repeated that uncooked starch in the natural state, locked up as it is in chambers of indigestible cellulose, has no nutritive value; these chambers need first to be broken up by prolonged and energetic chewing, and in this way *much or most of the starch is converted in the mouth into dextrines and maltose, very little passing into the stomach in the crude state* to set up disturbance in that organ and later in the bowel. If it is given as liquid or pap it will pass down as starch into the stomach, while if it is administered in a form which obliges the child to chew it properly, not only will the jaws, the teeth, and the gums obtain the exercise which they crave and without which they cannot develop normally, but the starch will be so thoroughly insalivated that much of it will be converted within the mouth into maltose. How foolish to upset the child's digestive system by deluging it with liquid starch and then to endeavour to correct matters by giving the malt extract which the child can and should himself manufacture within the laboratory of his buccal cavity.

Clearly, then, the child should make his first acquaintance with starch, not in the form of a liquid or pappy patent food, but in a solid and somewhat tough form. The best means of achieving this end is occupying my attention and I hope soon to publish the results of my investigation. Meanwhile, I would point out that hard, well-baked crusts constitute a convenient form in which to administer starch to children. A piece of crust may be put in the oven and rebaked; this not only hardens it but helps to convert the starch into dextrine which is a stage on the road to maltose. If the crust be then cut into a suitable shape and spread with bacon fat or fresh butter it constitutes a most agreeable morsel. Later we may give hard plain biscuits. The same principle should be acted upon during later childhood and youth: we should always give, as far as possible, the starch in a form compelling abundant mastication. Loaves should be shaped so as to give a maximum of crust and a minimum of crumb and should be baked hard. Such loaves are quite as nutritious as the ordinary ones and much more digestible, containing as they do an abundance of dextrine and not a little maltose, and compelling efficient mastication, especially if eaten, as they should be, without any fluid. A lady who has the catering for a large number of girls gives the bread in this way and she tells me that there is keen competition for the most crusty portions.

I do not say that starch in the liquid and pappy form should find no place whatever in man's dietary at the present day, for this would imply the prohibition of porridge, boiled potatoes, milk puddings, and the like. We cannot put back the hand of time and return to the food of our primitive ancestors, nor is it desirable that we should, but we can, at least, arrange matters so that a large proportion of the starch we consume shall be in a form inviting mastication, such as crusts, stale bread, stale cake, biscuits, and so forth. The less children eat of pastry, or, indeed, of any luxurious foods, the better; if brought up on a healthy dietary and under healthy conditions generally they will relish their simple fare more than the choicest dishes of the epicure. I do not, I say, object to the child consuming a certain proportion of starch in the liquid or pultaceous form, for if by bringing him up on a rational dietary his instinct to masticate be afforded due opportunity to develop he will be likely to subject even soft vegetable food to something like adequate mastication; this will tend to mitigate the evils associated with such food, not only by facilitating the digestion of starch, but by flushing the mouth and promoting the health of the teeth and buccal mucous membrane.

The question how far children should be allowed to crack nuts may here be considered. If the child has been brought up on pappy food, and has in consequence brittle and ill-developed teeth, the cracking of hard nuts will be likely to injure them, and this is *a fortiori* true if any of the teeth are carious or "filled." And not only nuts but hard food of any kind, such as ship's biscuits, may in these circumstances injure the teeth, as many of those who went through the recent South African campaign can testify. But if, on the other hand, the child has from the beginning been fed on coarse hard foods, so that the teeth have been allowed to grow dense and strong, no harm is likely to ensue from cracking such nuts as filberts and Spanish nuts. If a squirrel or a monkey weighing a few pounds can do so with impunity surely the young human should be able to also. The cracking should, however, be done by the molars, while such hard nuts as Brazils had best not be tackled at all.

Animal food does not need the same amount of mastication

as vegetable food since it is not digested in the mouth, though some contend that the mixture of proteid with alkaline saliva facilitates its subsequent peptonisation. Cooked animal food is, however, all the better for some mastication owing to the coagulation of the proteids, and in order to insure the efficient mastication of meat, fish, and poultry Dr. Sim Wallace recommends that they should be given in large pieces cut thin. "Flat pieces about one inch square generally *necessitate* a certain amount of mastication. It is difficult to swallow large flat pieces of meat without mastication, but when finely minced little or no mastication is called forth." The younger the child the more underdone should the meat be.

EXAMINATION OF THE MOUTH AND ADJACENT PARTS.

If a child be brought up on the lines indicated and under healthy conditions generally it is tolerably certain that the maxillary apparatus will develop normally, that the teeth will be strong and well opposed, and show little tendency to disease; but inasmuch as the methods advocated are but seldom put into practice disorders of the teeth, more especially caries and irregularities, are common, and hence with a view to promote more efficient mastication it is always advisable to examine our patient's teeth.

Each individual tooth should be inspected in a good light for the presence of caries and careful note should be taken of the "bite," a normal bite implying not only a proper opposition of the two rows of teeth but the capacity of the lower ones to move freely across the upper; mere vertical movement of the mandible does not constitute efficient mastication. In this connexion it must not be forgotten that an unopposed molar is useless for purposes of mastication, and it is by no means rare to find in a mouth several sound unopposed molars which are for this reason absolutely functionless. Nay, more than this, it may happen that teeth, perfectly sound ones, too, far from helping, may actually interfere with mastication; thus among the poor we sometimes find all the teeth gone save the upper canines and the lower incisors, and the teeth and gums being alike unable to come into contact nothing worthy of the name of mastication is possible; it would be far better to be without any teeth whatever, for the toothless gums would then be permitted to come into contact along their entire extent, under which condition they gradually harden and come to be quite efficient grinding agents.

Next the gums, the alveoli, and the roots of the teeth must be examined, especially for the presence of erosion, tartar, and pyorrhœa alveolaris, this latter condition being evidenced by the welling up of pus upon pressing the gums against the sides of the teeth.

If our examination of the mouth discloses anything likely to interfere with mastication the aid of the dentist should at once be sought, but every physician should be so far acquainted with disorders of the teeth as to be able to say, in the majority of cases, at all events, when this is necessary. I am convinced that far more illness than is generally supposed is attributable to dental defects and this even among the more leisured classes. With regard to pyorrhœa alveolaris, it has to be remembered that it not only does harm by causing loosening, lengthening, and shedding of the teeth and thus interfering with mastication, but also by contaminating the stomach and the blood and thus upsetting the digestion and causing constitutional diseases such as anæmia and arthritis; and inasmuch as poisonous discharges from the nose, the naso-pharynx, the pharynx, and the tonsils may act in a similar way, these parts also should be inspected in connexion with the examination of the teeth. In the dust-laden atmosphere of towns they are very liable to disease and even when healthy are necessarily dirtied; some go so far as to advise all town dwellers daily to wash out the nasal passages and to gargle the throat, but whatever may be thought of this it is certain that under existing dietetic conditions special means are needed in order to keep the mouth and teeth clean. When man fed on raw food this was not necessary, the food itself and the copious flow of saliva induced by prolonged mastication effectually cleansing these parts; but, under present conditions, food tends to remain within the mouth, especially between the teeth and in their crevices and therefore special means are needed to remove it. This is done by "cleaning the teeth" and by rinsing the mouth.

The tooth-brush.—Probably the ideal method of cleaning the teeth is that adopted by many primitive and not a few semi-civilised peoples—viz., rubbing them with a twig of wood which has been teased out at one end so as to form a sort of brush by means of which the teeth can be burnished and food dislodged from them. The modern tooth-brush requires to be used with great caution as it is capable of doing much harm, not only by removing the mucoid film which according to Dr. Wallace protects the teeth from corroding agencies,[2] but probably also by injuring the edge of the gum and the neck of the teeth and thus setting up the condition known as "erosion." Certain it is that some of the best sets of teeth I have encountered have been wholly unacquainted with the tooth-brush. In any case the brush should be employed with great care; it should be soft and should always be drawn away from the gums both on the inner and outer aspect of the teeth towards the biting surface as well as across the latter, never tranversely across the outer surfaces, as so frequently is done. The object of these procedures is to dislodge any particles of food that may have collected between the teeth or in their crevices. For this purpose the tooth-pick may also be employed judiciously. In order to render the enamel of the teeth white it is better to rub each tooth carefully with some soft material, such as chamois leather, rather than to scrub them with a brush. Tooth-powders should not be used as a matter of routine but only occasionally and for appearance rather than for cleanliness and should consist of some simple non-irritant material. Antiseptic powders and washes are to be scrupulously avoided, for it is neither desirable nor possible to render the buccal cavity aseptic; myriads of bacteria flourish within it, many of which play a useful part as scavengers. The time of all others for cleaning the teeth is just before going to bed, so that the food shall not be allowed to decompose in the mouth during the night. There will then be no need to use the tooth-brush in the morning.

Rinsing the mouth.—The mouth should be rinsed out as a matter of routine after each meal and on rising, and care should be taken to do this before the early cup of tea so as not to contaminate the stomach with the buccal secretions which have accumulated during the night. Inasmuch as raw vegetable food has a cleansing effect on the teeth it is often a wise plan, especially in the case of children, to finish a meal with some kind of fruit, such as an apple or an orange. It hardly seems necessary to insist upon the necessity for keeping all artificial dentures thoroughly clean.

AN ANALYSIS OF THE VACCINATION STATISTICS OF THE METROPOLITAN ASYLUMS BOARD FOR 1901 AND 1902.

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WITH the appearance of the annual report of the Metropolitan Asylums Board for 1902[3] access is given to one of the most valuable contributions to the question of vaccination and small-pox hitherto published. Unfortunately, those who will have the leisure to study the figures set forth by the statistical committee must of necessity be few and an attempt has accordingly been made to summarise in the following paper the facts which everyone is anxious to know but which everyone has not the time to seek out for himself. For this purpose the figures for 1901 and 1902[4] have been combined and a total of 9659 cases of small-pox has in this way been obtained for analysis. The age incidence and mortality in unvaccinated cases are too familiar to need more than a passing comment. The incidence in early life is overwhelming and the mortality at all age periods is high, varying between 20 and 50 per cent. The figures in the annual report show the unvaccinated cases in the late epidemic to have followed this general rule. The incidence of vaccinated cases is small in early life and reaches its maximum in the third decade, whilst the mortality increases with each decade, reaching to about its maximum in the

[2] This film can be felt by the tongue as a somewhat rough covering which gives place to a smooth surface after the use of the tooth-brush.
[3] Metropolitan Asylums Board Annual Reports, 1901, 1902 (Reports of the Statistical Committee).
[4] Ibid.

fifth. In the fifth and subsequent decades the mortality remains practically the same. These points are shown in Tables I. and II.

TABLE I.—*Showing the Age Incidence of the Scar-bearing Vaccinated Cases; Cases in which the Scars were not seen but may have been obscured are included.*

—	All ages.	Under 10 years.	10-	20-	30-	40-	50-	60-	70 and upwards.
Scar-bearing cases ...	7067	140	1170	2547	1781	914	334	131	40

TABLE II.—*Showing the Percentage Mortality at Several Age Periods among the same Scar-bearing Vaccinated Cases shown in Table I.*

Age periods.	Under 10 years.	10-	20-	30-	40-	50-	60-	70 and upwards.
Mortality	3	2	7	15	22	21	24	20

In Table III. the vaccinated cases are shown in the classes to which they have been assigned in the statistical reports. "Large scars" (Class A 1) have a total area of one-half and upwards of one-half square inch; "scars of medium size" (Class A 2) a total area of one-third but less than one-half square inch; and "small scars" (Class A 3) a total area of less than one-third square inch. Under these conditions three scars, each of the area of a threepenny-bit, would be classed as "large scars" and the classification does not take into account the superfluous area of those formidable vaccination scars for which so much is supposed to have been claimed by statisticians. With these premisses we may now consider the age incidence of the cases in each class shown in Table III.

TABLE III.—*Showing the Age Incidence of Vaccinated Cases classified according to the Character of the Scars; each Class is represented as comprising a Total of 1000 Cases.*

Character of scar.	Under 10 years.	10-	20-	30-	40-	50 and upwards.
Large (A 1)	15	187	411	265	98	36
Medium (A 2	22	109	248	268	272	131
Small (A 3)	45	112	199	241	211	192
Four or more	23	217	441	207	77	35
Three	11	148	350	309	127	55
Two	15	114	273	292	190	116
One	31	129	270	236	203	131
Half or more than half foveated	21	188	418	246	99	28
Less than half foveated	15	183	387	263	107	45
Plain scars	27	127	293	238	182	133
Scars absent	83	204	210	157	127	219

The figures in this table demonstrate a point of some importance—namely, that the incidence in later life is very much greater in the classes with inferior vaccination scars. As later life is also the period of highest mortality deductions made from mortalities for classes as a whole are likely to be fallacious and it becomes necessary to arrive at the mortalities for certain age periods in each class. These have been shown in Table IV.

In Table IV. and in those that follow all cases under the age of 20 years have been included in the first age period, as the numbers of cases in the first decade taken alone are insufficient to give a trustworthy mortality. Cases at the ages of 40 years and upwards have been combined in one age period, as the mortality after 40 years is not liable to any great variation (*vide* Table II.) and the total mortality for the group of ages

TABLE IV.—*Showing the Percentage Mortality of Scar-bearing Cases arranged according to Age Periods and the Character of the Scars.*

Character of scar.	Percentage mortality for age periods. Under 20 years.	20-	30-	40 and upwards.
Large (A 1)	2	5	11	18
Medium (A 2)	0	10	20	22
Small (A 3)	4	15	27	22
Four or more	1	4	10	12
Three...	2	5	12	19
Two	3	6	17	21
One	3	14	24	27
Half or more than half foveated	1	4	8	14
Less than half foveated ...	2	5	11	17
Plain scars	2	9	21	23

"40 and upwards" will not therefore be affected by any preponderance of cases in a particular decade. The comparatively low mortality of the cases with scars that have area, number, or foveation in their favour appears with so much consistency at all age periods that it may be taken as a proof that small-pox patients with four large foveated scars are less liable to death from the disease than those with scars which are of a smaller total area, fewer in number, and indifferently foveated or plain. The difficulty is to separate the possible influences of each of these factors. If the majority of one scar cases are contained in the "small area" class, as of course they are, and if the majority of four scar cases belong to the class of maximum area, no deductions can be made from Table IV. as to the respective influences of area and number. With foveation, again, a much larger proportion of foveated scars than of plain scars belongs to the "large area" class and the low mortality for well-foveated scars is on this account open to criticism. Table V. has been constructed with a view to determine the proper position of foveation in relation to number and area.

TABLE V.—*Showing the Percentage Mortality of Cases with Large Plain Scars compared with that of Cases with Large Foveated Scars and Cases with Small Foveated Scars.*

Character of scar.	Number of cases.	Percentage mortality for age periods. Under 20 years.	20-	30-	40 and upwards.
Large scars, half or more than half foveated ...	685	1	3	7	4
Large plain scars	913	2	7	14	17
Small foveated scars ...	675	2	9	24	22

In this table the large scars are represented by three or more scars of a total area of one-half square inch and upwards; the small scars include one or two scars of a total area of less than one-half square inch and all scars of a total area of less than one-third square inch. This awkward combination of classes is necessary in order to get sufficient numbers. Now if foveation is an essential accompaniment of successful vaccination, plain scars however large and numerous will give a high mortality, whereas from the table it is seen that they give a lower mortality at all age periods than small foveated scars. Hence it may be inferred that foveation is not essential. If, on the other hand, foveation is altogether negligible large plain scars will give the same mortality as large foveated scars. From the table it is seen that large plain scars give a considerably higher mortality at all age periods, and the double inference may now be drawn that foveation is neither an essential outcome of successful vaccination nor an altogether negligible factor in the protective influence associated with scars possessing foveation as one of their attributes. Tables VI.

and VII. have been designed to show the respective values of area and number.

TABLE VI.—*Showing the Percentage Mortality of Cases with Two Large Scars compared with that of Cases with Three or More Small Scars and of Cases with Two Small Scars.*

Character of scar.	Number of cases.	Percentage mortality for age periods.			
		Under 20 years.	20–	30–	40 and upwards.
Two large scars	776	4	5	12	24
Three or more small scars...	478	0	11	17	17
Two small scars	544	3	9	23	19

The large scars in Table VI. have a total area of one-half square inch and upwards, and the small scars a total area of less than one-half square inch. If number is essential and independent of area three or more small scars will give a lower mortality than two large scars, and two large scars will give the same mortality as two small scars, and the diminished area of the smaller scars will not raise the mortality. From Table VI. it appears that neither of these conditions obtains. Three or more small scars give a higher mortality in the third and fourth decades where the number of cases is greatest and the percentages are most reliable, and the same may be said of two small scars. It may then be concluded that number is not essential, whence it follows that area has a certain influence and is not negligible. Again, if number has no influence when independent of area, cases with three scars of a given total area will show the same mortality as cases with one scar of the same area. The mortalities for groups of cases satisfying these conditions are given in Table VII.

TABLE VII.—*Showing the Percentage Mortality of Cases with Three Scars of Limited Total Area compared with that of Cases with One Scar of the same Area.*

Character of scar.	Number of cases.	Percentage mortality for age periods.			
		Under 20 years.	20–	30–	40 and upwards.
Three scars of medium total area (A 2)	226	0	8	18	24
One scar of medium area (A 2)	178	0	10	21	29

From the table it is seen that three-scar cases have a lower mortality at all age periods than one-scar cases, whence we may infer—in the first place that the factor of number, though not essential, is not altogether negligible; and in the second place that the influence of area, though considerable, is not paramount to the exclusion of number. It cannot be pretended that the number of cases in Table VII. is sufficient, neither can it be maintained that the area of the scars in the two classes is likely to be the same. The upward limit in the "medium" scars is "less than half a square inch," and the downward limit is one-third of a square inch, leaving a latitude of one-sixth of a square inch of which both the one-scar class and the three-scar class undoubtedly take the fullest advantage. Unfortunately, in class A I. (large scars) where the numbers are more than sufficient, the same criticism applies with still greater force, since the area in this class is altogether unlimited in an upward direction and the more numerous scars will necessarily have a very much larger total area.

For lack of material the question of the possibility of number being a negligible quantity must be left undecided. The conclusions that have been arrived at will then be: (1) That scars combining the qualities of area, number, and foveation are associated with a lower mortality at all ages and a lower case incidence in old age than scars which are deficient in these qualities; (2) that foveation is not essential; (3) that foveation is not negligible; (4) that number is not essential; and (5) that area is not negligible. The propositions that have not been proved are: (1) that area is not essential: and (2) that number is not negligible.

Although the chief aim of this paper has been to set forth figures for others to interpret, it may not be out of place to conclude with a few suggestions as to the possible explanation of some of the results that have been shown. Taking age incidence first the order of things that might have been expected is found to be reversed. With efficient protection in early life, gradually failing in adolescence the case incidence, when allowance has been made for the diminishing numbers of the population, should be comparatively high in later life, since the number of persons who will have acquired renewed protection by small-pox in middle life will be comparatively small. With an indifferent protection in early life, failing rapidly in adolescence, the case incidence in later life should be comparatively low, since the number of persons who will have acquired protection by small-pox in middle life will be large. Following out this reasoning the age incidence in Table III. would seem to show that persons with one scar are better protected in early and middle life than persons with four or more scars. Now even if persons with one scar have the same protection as persons with four scars it is impossible to conceive that they should enjoy a protection which, if age incidence were any index, would be not only equal to, but very much greater than, the protection conferred by a larger number of scars. The assumption that vaccination scars fade with advancing years fits in with the anomalous age incidence of the scar-bearing classes in a very striking manner. In this connexion it is interesting to examine the age incidence of cases, stated to have been vaccinated in infancy, in which the scars were absent. The incidence of the cases in this class, appended at the foot of Table III. under the heading of "Scars Absent," is seen to be greater in old age than the incidence of the cases of any other class in the same age period. It is evident that if the scars fade with time the population with no scars, or with few scars, will be increased with each year at the expense of the population with many scars, and will consequently contribute a greater number of aged inmates to small-pox hospitals and all other institutions. The excessive number of cases with no scars occurring in old age would probably be even greater were it not that the cases are derived from two sources. The class consists in part of persons whose statement of vaccination is founded on fact and whose numbers probably increase with age, and in part of persons whose statement of vaccination is founded on conscientious belief and whose numbers, though possibly affected by sex, remain unaltered by age and tend to smooth away the discrepancy between the incidence in middle and late life. To the objection that there are no facts to support the theory of fading scars it might be answered that the facts are contained in the records of the characteristics of vaccination scars at all times of life in many thousands of cases, records in which the fading foveation, the indistinctness of outline, progressing till only the central parts of the scar can be seen and measured, and the diminished number of scars incidental to old age can all be clearly traced.

Foveation, which may be considered next in order, would seem to be an indication of the depth of cicatricial tissue. Whereas severe burns do not leave foveated scars a superficial burn will leave a scar showing a pitted surface which is identical in appearance with the surface of a well foveated vaccination scar. So it may be supposed that the inflammatory reaction of some vaccinations does not penetrate deeply enough to produce a foveated scar, whilst a severe inflammation may penetrate so deeply as to produce the well-known solid white scars with a smooth or puckered surface devoid of foveation. In the first instance the specific reaction of the vaccine may be supposed to have been feeble and in the second instance to have been outpaced by inflammatory processes due to pyogenic organisms. The foveated scar will be produced by a reaction forming a mean between the insufficient effect of a feeble lymph and the severe inflammation resulting from a contaminated lesion. The simple explanation of the influence of area is that the more widely the skin is scarified at the time of inoculation the greater will be the number of points of entrance for the vaccine and the larger the resulting scar. The influence of number probably lies solely in the fact that in most instances a larger surface of skin is scarified in making four insertions than in making one. Though eminently undesirable it is probable that the same protection could be conferred by scarifying the skin over a large continuous surface and producing a large

group of confluent vesicles, as would be conferred by making four separate scarifications over smaller areas. Explanations are a source of comfort to those who can accept them and of vexation to those who cannot. In any case they are of secondary importance and if the public can be induced to recognise that four large scars are associated with a higher state of protection than one small scar and to condemn the practice of vaccination by less than four insertions they need not be burdened with the explanation of these mysteries.

A NOTE ON COLOTOMY AND COLECTOMY.[1]

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SOME ten years ago the value of colotomy in cases of rectal cancer was discussed at this society. At that time several of the most experienced members of the Liverpool Medical Institution were only prepared to advocate it as a means of giving relief when the most urgent and distressing symptoms were present. I remember that it was classed with gastrostomy and gastro-enterostomy for malignant stricture as dangerous to life and as producing other ills almost, if not altogether, as unpleasant as those which it was designed to relieve. We may truly say now that we have changed all this, not only for colotomy, but for gastrostomy and gastro-enterostomy as well, but especially as regards colotomy. And it is felt now that it is right to recommend the latter in any case of rectal cancer unsuitable for excision in which distressing symptoms are present or are indicated; indeed, enthusiasts (and I may include myself) for high operations in extensive rectal cancer seem to be inclining again to substitute a permanent iliac colotomy for these very serious and wide operations, or to do it as a preliminary, and so to lessen the risk of the subsequent proceeding.

Modern colotomy has unquestionably gained in favour, and this gain is due to two causes: (1) lower mortality and (2) improved artificial anus. The latter has, I consider, been the more important factor, for when a patient is labouring under a mortal disease it is more a question of comfort and the capacity to continue his daily avocation than the simple prolongation of a more or less miserable existence. In the discussion to which I have referred it seemed to be strongly felt that the discomforts of the artificial anus were frequently as great as those of the malignant ulceration. The want of control over the evacuations, the dependence upon assistance after each movement of the bowels, and the rather frequent occurrence of prolapse certainly rendered the life of a colotomy patient a far from happy existence. Now usually very fair control is established in most cases, and prolapse hardly ever occurs, whilst with an anterior opening the patient can attend to himself—a condition of independence which is greatly appreciated by the good, hopeful, deserving class of patients. I have no sympathy with those who give in. It is the duty of all of us, not only to live, but to work as long as we are able, and it is as we all know quite possible for any colotomy patient not otherwise disabled to do his daily work, whether manual or sedentary, when the artificial anus is a good one.

Amongst the various suggested methods for performing iliac colotomy it must be conceded that, at any rate in England, Cripps's method is that which has met with most general favour; indeed, Mr. Herbert Allingham, who advocated a rival method, has of late accepted the former except in cases in which the sigmoid mesentery is long and the patient may be expected to survive a considerable time. In my judgment Allingham's present position is a wise one. The variability of the anatomical conditions of the sigmoid flexure is such as to render it impossible that the same method of dealing with it can be the best for every case, and it certainly seems the fact that when the flexure is voluminous and its mesentery long Cripps's method, however carefully accomplished, is very likely to be followed by a moist patulous anus, over which it is difficult to create any control and through which prolapse of bowel is very probable. Allingham's procedure is undoubtedly rather more severe, but it results in an excellent orifice and the increased comfort when the operation is properly indicated is well worth the increased risk. The results desired from a colotomy are (1) relief, (2) safety, and (3) comfort.

First, as to relief. In cases of obstruction immediate relief is urgent. This perhaps applies to 20 per cent. of the cases; less when the disease is in the rectum; but more when it is in the colon. When the operation is undertaken with the necessity of giving immediate relief I urge the glass-tube method, and I may do this with more confidence now than in 1891 when I first introduced it, since not only has my personal experience of the method been fairly considerable since that time, but I gather that it is now generally practised in these circumstances. Cripps's and Allingham's operations do not provide for the immediate opening of the bowel; but I have practised both operations many times, and in all sorts of circumstances, in conjunction with the glass tube, and have no reason to think that these operations are rendered appreciably more dangerous thereby. If this experience is correct and it is true—as I believe it to be—that opening the bowel at the time of the primary operation by the glass-tube method does not appreciably increase the risk to life, then it is certainly a desirable addition in most cases, for not only is it convenient that the bowel should be open and free for the passage of flatus or fæces, but the wound in the abdominal wall may be smaller, a point of some importance, and the operation is completed at one sitting. There is no occasion for the subsequent incision and later paring of the mucous membrane required in Cripps's operation, and there are no subsequent clamping and removal of bowel as in Allingham's. I therefore distinctly recommend that in performing either of these operations the glass tube should be used and the bowel opened at once, whether obstruction is present or not.

Next as regards safety. When the patient is in an exhausted condition Cripps's operation with or without the tube should be selected, as the removal of bowel, especially if the mesentery be thick, increases the risk. Should obstruction be present in introducing the tube every precaution must be taken to avoid leakage. In all cases both the bowel and the tube should be attached to the abdominal wall, the bowel by at least two green-gut sutures connecting it with the deep muscular aponeurosis, and the tube by passing its silk ligatures through the skin and knotting them. Then if the tube is accidentally dragged on it is well and safely anchored and when it comes away, if the adhesions between the bowel and the parietal peritoneum are weak, they are backed up by the green-gut sutures.

As regards comfort the essentials are: (1) a high operation, a small wound, and opening the highest portion of colon available, as recommended by Cripps; (2) the formation of a good spur; (3) embodying the principle of Allingham's operation whenever the sigmoid flexure is voluminous and its mesentery long and the patient sufficiently robust to make this wise; and (4) the use of a good plug and the cultivation of a regular habit of bowels. After various trials with trusses and belts I have come to use an aluminium mushroom-shaped plug. The plug or stalk is slightly bulbous and long enough to pass through the whole depth of the abdominal wall. The head or flange is oval-shaped and wide; it is slightly concavo-convex to fit the abdominal surface. A single layer of soft lint with a hole in the middle for the stalk is placed under the flange and a good pad of cotton-wool above it, the whole being kept in place by a narrow abdominal belt, such as I use after appendicectomy. This is the cleanest and by far the most comfortable and effective apparatus I have yet tried.

In 1898 I designed an operation to give better control over the artificial anus. It involved using Madelung's method of closing and returning the rectal end of the bowel into the abdominal cavity, whilst the upper end was brought out at a distance, after having passed between the muscles—in fact, after the principle of Hahn's or Frank's gastrostomy. The operation was effective but dangerous. It was unnecessarily severe and in passing the bowel between the muscles septic infection was liable to occur. For these reasons I soon abandoned it and I think now that sufficiently good control can be obtained by ordinary methods.

The details of a colotomy by the glass-tube method are as follows. 1. The incision is made in accordance with accepted principles, but may be smaller, that is from one and a half to two inches, according to the condition of the abdominal wall and the bowel. 2. If the mesentery be very short the bowel is firmly drawn out and a running suture of medium thick silk is inserted round an oval area involving

[1] A paper read at the Liverpool Medical Institution on Feb. 12th, 1903.

as much of the circumference of the bowel as possible, so as to insure its posterior wall being well brought up to the surface to form a good spur. The inclosed area is then gripped with two catch forceps, incised, the tube plugged with wool inserted, and the ligature tied. A second silk ligature is then simply tied over the first to render it more secure and is knotted on the opposite side of the tube. Two or more green-gut sutures are next passed between the outer coats of the bowel and the deep tissues of the wound, and finally the ends of the silk ligatures are passed through the skin and tied so as to secure the tube in case of roughness or accident. Usually the wound is too small to need any further sutures. The parts are well powdered with iodoform and dressed with gauze and wool as usual, and a binder split to transmit the tube is firmly applied. If the bowel is empty a light plug of wool is kept in the tube. If loaded with formed motion a sponge bag containing some iodoform wool or wool sprinkled with eucalyptus oil is attached. If with loose motion a short piece of Down Brothers' thin wide indiarubber tubing is attached to the glass-tube and allowed to fall into a basin at the patient's side. 3. If the mesentery be long and the patient in good condition the loose loop of sigmoid flexure should be drawn out, the mesentery ligatured separately, a large tube fastened into the top end and a small one into the bottom end, and then all the redundant bowel cut away. It is better not to ligature the mesentery together with the bowel to the tubes, as unless the grip is very tight some of the vessels are liable to retract and smart hæmorrhage may result. It will be found much safer to tie the mesentery in two or three sections by itself. When the sigmoid mesentery is of medium length either Cripps's or Allingham's method may be used; but in all cases when doing Cripps's operation care must be taken to insert the tube into the highest portion of bowel which can be brought out of the wound and to include the whole, or almost the whole, circumference of the bowel. 4. Usually on the fifth day the tube is ready to come away. When this is the case, indicated by leakage beside the tube, the silk sutures are cut and it is withdrawn. 5. Subsequently the patient is kept in bed, the motions being passed into the dressings until the wound is healed, when the plug and belt are worn.

Colotomy in other regions.—For some time I maintained it was our duty to perform colotomy as low down in the bowel as we could consistently with being well clear of the disease. Now I am inclined to think that there are only two good colotomies—sigmoid and transverse. In the few cases in which I have had to do the latter it has answered very fairly well—not so well as the sigmoid but decidedly better, I consider, than the lumbar operation. Right iliac colotomy I do not like at all; the motions are liquid and quite uncontrollable. I never do it except in cases of obstruction and then only in the hope and expectation that subsequent enterectomy or short-circuiting will be possible. When the cæcum is opened only a small tube should be used, one of from half an inch to five-eighths of an inch in diameter being sufficient.

It has been said that subsequent trouble will result if either the sigmoid flexure or cæcum are opened and attached in the middle line. I have had to do this occasionally and in practice no inconvenience has resulted. This position would never be chosen, but at any time there may be urgent reasons why it should be adopted.

The operation of colotomy is so closely associated with that of colectomy that I can hardly treat of one without reference to the other. Often when colotomy only is intended before exploration colectomy is ultimately undertaken, or the reverse may be the case; whilst, as I have stated, it is no unusual thing for me to cut away several inches of colon with the simple object of improving the character of an artificial anus. When, however, the original intention is colectomy there are a few additional points which need careful consideration. The chief of these are the exact location of the disease and the restoration of the continuity of the bowel.

It is a great misfortune that malignant disease of the colon is so very undemonstrative in early stages. Recently in one week I was asked to see three cases all of which were too late for operation—that is, in all the tumour was hopelessly adherent to neighbouring important structures. This form of cancer is one of the least malignant with which I am acquainted, and could one obtain the cases early enough, as happens more frequently in the rectum, the results would be excellent. In its first stage, however, it apparently sets up no recognisable symptoms and I have no doubt it often exists for several months or a year or two, according to the type of the growth, before any evidence whatever of its presence is afforded. The earliest symptoms are frequently those of intestinal indigestion, brought about by some difficulty in the contents of the bowel passing the diseased part; they are flatulence, slight colicky pains, some distension, and irregularity of the bowels. In other cases there are no obstructive symptoms at first, but mucus and perhaps blood appear in the motions. At a later stage some obstruction is usually present, characterised by increasing constipation with attacks of colicky pain. Loss of flesh occurs and ultimately a tumour is discovered in some cases, whilst in others the surgeon is called in because complete obstruction has supervened. The clinical details are influenced by the character of the growth. From 35 to 45 or 50 years of age the disease is generally of the fungating type and produces more of a tumour than an ulcer. In these cases there is often no obstruction but plenty of mucus and blood in the motions. The abdomen is not distended and if carefully palpated the tumour might usually be discovered much earlier than it is. Still, one must bear in mind that the patient suffers little and frequently makes no complaint until it is too late. Indeed, it is sometimes the discovery of the tumour by the patient himself that leads him to consult his medical adviser. From 50 to 70 or 80 years of age the growth is usually of the chronic ulcerating type, producing the ring stricture. In these cases the symptoms are almost entirely due to obstruction, which in the end generally becomes complete owing to the narrow lumen at the strictured part (often only transmitting a No. 10 catheter) becoming blocked by some undigested substance in the fæces.

When distension is absent a tumour is often present and in this way the disease is usually located in the younger class of patients; but after obstruction has once set in it is rare to be able to detect a lump and one must be guided in other ways in locating it. Probabilities are of no help. The surgeon must never cut down over a particular region because that is statistically the most probable site of the disease. In the absence of stronger evidence exploration in the middle line should be the practice. The best aids to diagnosis are the capacity of the bowel below the stricture, the condition of the cæcum and colon as made out by percussion and palpation, and the evidence afforded by pain and peristalsis. The patient is often quite conscious of the site of the stricture, having many a time felt a colicky wave of peristalsis pass away at a particular spot with a gurgling sound as gas and liquid were forced through the stricture. And when the bowel is much hypertrophied one may see the peristaltic wave gather and run on until it comes to a stop at the stricture. The enema, too, is a great help when the disease is low down. As the result of experiment on the dead subject I believe the bowel will hold something like two pints with an obstruction in the sigmoid flexure, but in actual practice one finds that from half a pint to a pint is all that is tolerated, usually the former, and that it is returned at once without motion. In these circumstances the tumour is in the most favourable place for operation. When it is higher up large quantities of injection may be introduced and retained. The operator has then to be guided chiefly by palpation and percussion of the regions of the large bowel and if nothing definite can be made out a middle-line exploration should be undertaken.

When the tumour is located it must be freely exposed, and if suitable for removal the mesentery in connexion with the part involved is carefully divided so that the diseased coil of bowel may be brought out of the abdomen. The subsequent steps of the operation depend upon the mode of union to be attempted, and in regard to this I continue to differ strongly from those who consider primary end-to-end union by suture or button the proper course to adopt as a routine practice. That it is the neatest and most satisfactory to the surgeon when the patient lives I do not doubt; but it is certainly more dangerous without ultimately being at all more efficacious than when the ends of the bowel are brought out and the continuity of the canal is subsequently restored. When this is done it is a rare thing to lose a patient who is not at the time of the operation seriously depressed as the effect of several days' obstruction of the bowels. In this connexion I may as a surgeon warn my medical friends that a patient after ten days' obstruction in the lower bowel is in much worse case

than his pulse and appearance seem to indicate. The surgeon is asked to perform colotomy in these circumstances with the assurance that the patient is in excellent condition. It is quite true that he is fit to bear the operation; but when he dies a few days later death should be ascribed to the absorption of toxins, which is the cause of it, and not to the operation which has had nothing to do with the unfortunate result.

In 1892 I commenced operating by bringing out the ends of the bowel and after ten years' experience am strongly confirmed in my opinion that it is the right thing to do. I know nothing against it except that the patient has the discomforts of an artificial anus for a few weeks and the course of the case is prolonged by about a month—small evils compared with the gravity of the disease and the risks of end-to-end union. It has been suggested that stricture might result from incomplete removal of the spur, but such has not proved to happen in any of my cases. After dividing the mesentery the subsequent steps of the operation are of the simplest. The tumour being well drawn out of the abdomen, the ascending and descending portions of the colon are made to lie side by side, like the barrels of a double barrelled gun, in which relationship they are lightly sutured together for quite three inches inside the abdomen. Outside the abdomen a colotomy tube is ligatured into the upper end and a smaller tube into the lower end, when the diseased part is cut away, of course quite bloodlessly. A few fine sutures may be used to attach the bowel to the parietal peritoneum at the bottom of the wound, and if the incision has been long its ends are brought together with fishing-gut sutures.

In many cases the operation is very little more severe than colotomy. Five or six days later the tubes separate, and at the end of three weeks, as a rule, the carefully prepared spur may be clamped. I once had a warning that this should not be done too hastily. After complete obstruction the bowel is liable to be in a very septic and irritable condition, and so long as the spur feels thick and hard to the finger I believe it to be unwise to apply the clamp. As a rule it is supple throughout, and in these circumstances may be clamped at any time. One clamping is very likely to be insufficient, and if there is a considerable ridge still apparent at the bottom the clamp should be applied again. It need not be kept on each time until it comes away, as its work is thoroughly effected in 48 hours, when it is probably safer removed than left *in situ*. As soon as the spur is completely destroyed the artificial anus is closed. The entire operation has been completed in 24 days; but usually from six to eight weeks must be allowed for it.

In cases of malignant disease of the colon in which the mesenteric glands are involved I used to give a most depressing prognosis, but have now met with a few in which such a prognosis was not justified. About four years ago I removed a cancerous tumour of the sigmoid flexure, together with several enlarged glands in the attached portion of the mesentery. The glands were as large as Barcelona nuts, and I thought the case quite hopeless; nevertheless, she is now, four years after the operation, in excellent health and still continuing her vocation as a domestic nurse.

Two years ago I removed the cæcum and lower part of the ileum from a man, aged 38 years, for a soft malignant growth. The lump was of the size of a fist and several glands were enlarged, one measuring one and a half inches in diameter. Here, again, I gave a bad prognosis. He recovered well from the operation and a year later was in such excellent health that his medical friend, Dr. F. Heatherley, refused to countenance any longer a pessimistic outlook. He came to me and said, in effect, "Look here, you must do something for this fellow. He must not be condemned to die in this sort of way. How about the x rays?" Well, I do not think we have at present any information which warrants us to suppose that the x rays would influence the course of such a case, so I suggested that if the patient was willing to lie up for a month I would explore the abdomen, ascertain what the present condition was, and do what seemed to be best in his interests. This was decided on and one day, after quite half an hour's exploration, I succeeded in discovering and extracting one small gland of the size of a split pea which on microscopical examination showed no malignant change. Another year has passed and the patient is still as well as ever—so well, in fact, that he at once agreed to come here with Dr. Heatherley to show us that we know almost as little about the prognosis as about the treatment of cancer.

Liverpool.

CAN THE RESPIRABLE PRODUCTS OF HUMAN WASTE HINDER DEVELOPMENT AND LOWER VITALITY?

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THE following premisses will scarcely be denied. 1. That the infinite precautions for the due excretion of waste products observable in the economy constitute *primâ-facie* evidence of the poisonous nature of such products and that any serious or prolonged interference with the functions of any one of the great channels of exit—lung, kidney, bowel, or skin—is invariably followed by death. 2. That the blood current forms the chief medium of dissemination for systemic poisons. 3. That poisoning by the lungs may be at least as rapid and effectual as that by the alimentary canal, as witness the action of the so-called general anæsthetics, of sulphuretted hydrogen, carbon monoxide, and the like. 4. That the common use of the term "insanitary" as applied to ill-drained, ill-ventilated, and crowded dwellings is evidence of a consensus of opinion that the air of such dwellings has a definite influence in lowering vitality. Probably none of the foregoing statements will be seriously questioned, but when one approaches the crux of the matter and asks why is an insanitary dwelling insanitary, one receives answers such as the following: "Absence of sunlight," "absence of ozone," "absence of oxygen," "presence of organisms," "overcrowding."

If one ventures to suggest that the volatile products of animal waste may constitute deadly toxins and that such may find a very direct road to the tissues through the lung, one is met by incredulity. I find no suggestion in medical literature that such a process may be common. Volumes, and most useful ones, have been written on the subject of poisoning through the alimentary canal, as well as larger, and perhaps less useful, volumes on diet and drink. Even the theory of auto-intoxication (apparently a kind of unreasonable tissue-cussedness) has been dragged into account for the phenomena of lowered vitality. A girl has pale cheeks, damp cold hands, feeble pulse, and poor appetite, and she keeps them in spite of our drugs. No organic disease is to be found. Is one to be content with a diagnosis of constitutional debility or even auto-intoxication? No doubt the former is true so far as it goes. The predisposing cause must be undoubtedly within the girl, but the determining cause, the active poison, as I believe, starts outside the girl and, I think, usually enters by the lung. Here one, of course, is met by the argument, "But all the rest of the household may keep well under precisely similar conditions." To this there is the obvious answer: a single glass of whisky will make some persons drunk; a dose of poison harmless to the many may be harmful to the few. Medical opinion seems to hover on the edge of this question in a curiously uncertain manner. Its discussion is rarely or never attempted. Yet if there is anything in the view that the volatile products of animal waste constitute a poison readily absorbable by the lung, one can scarcely conceive of any more important issue, and it is solely in the hope of provoking some discussion of the subject that I venture to air my own crude ideas.

If we trace the path of a soluble body in its passage from the alimentary canal to the tissues and compare it with that of a volatile toxin starting from the alveolus of the lung, we see that even at the start the former may be handicapped by the possible action of the digestive ferments, then, according to its nature, it must run the gauntlet either of the epithelial cell or of the capillary of the liver guarded by the hepatic cell, and lastly it must face the ordeal of the capillary of the lung before reaching the tissues. In the case of the volatile toxin approaching by the lung the only barriers between it and the blood are the thin cellular walls of the air cell and capillary specially designed for the transmission of gases. The poison enters just at the moment that the blood is undergoing its final purification previously to being distributed to the tissues. From the capillary of the lung to the capillary of the tissue the road is clear, all is main line and "la Grande Vitesse." There can be no doubt that the lung provides the royal route

to the tissues. It is surely for this reason that we have long given up trying to drug our patients by the stomach before operating and now give our general anæsthetic by the lung. We choose a highly volatile toxin and in less than two minutes in skilful hands the patient is unconscious. The route then is emphatically "all right." If the inspired air contain sewer gas, or respiratory products, the blood is started from the lung *en route* for the tissues actually loaded with imported waste.

As to the *modus operandi* of the poison—if poison it be, one needs to go no further than the out-patient department of a large hospital; the well-remembered smell gives assurance that there is no lack of the volatile products of human waste. Most assistant physicians or surgeons will bear me out in the assertion that a long afternoon in a crowded and badly ventilated out-patient room is fatiguing; to some very exhausting. To the most enthusiastic even good cases seem to be a little less interesting, and even good students are a little less attentive, towards the end of the afternoon. The looker-on without duties to perform experiences the same fatigue. There can be no question but that the sense of fatigue both of body and mind is largely due in some way to the foul atmosphere. The greater the crowd and the fouler the atmosphere the greater the fatigue. I suppose it is still generally accepted that fatigue of muscle is coincident with accumulation of its waste and may be partially removed by lessening this accumulation—as by massage. It would seem that other people's waste is quite as capable of causing fatigue as our own. But besides the subjective sensation of fatigue objective changes are usually visible. The face becomes paler and a shade blue and pinched. If anyone doubts this statement let him contrast the aspect of the congregation of any fashionable church or chapel at the end of the service with that at the beginning. In most cases half an hour in the open air and a meal will remove the greater part of both objective and subjective effects. The conclusion is forced upon one that the condition is mainly circulatory.

Is this condition central or peripheral? Faintness, palpitation, and the like are relatively, though by no means actually, uncommon, and, as a rule, the chief inconvenience felt is fatigue. It is apparently the periphery that mainly suffers. Now putting aside the heart the arteriole is, so far as we know, the only portion of the blood-carrying tube the lumen of which is under the direct control of drugs; we can certainly dilate it at will either through the stomach or the lungs. We have, therefore, presumptive evidence that, granted the occurrence of pallor among persons temporarily exposed to an atmosphere largely fouled by human waste, contraction of the arteriole is the most probable determining factor. We urgently need the intervention of the test of scientific experiment to put this to the proof. We know that obstruction to arterial flow is a common cause of passive hyperæmia. Contraction of the arterioles and consequent dilatation of the venules would account for the pallor and blueness noted above; but, besides this, contraction of the arterioles means sluggish capillary flow, lessened supply of nutriment and oxygen to the tissue cell, and slower removal of waste—of waste, be it remembered, already reinforced by the foreign supply brought in from the lungs. The metabolism of the tissue cell thus starved and choked must be lessened and its vitality and functional activity must be impaired so long as the action of the poison continues.

For the sake of argument let it be conceded that some such action on the peripheral circulation may explain the undoubted effects of temporary exposure to an atmosphere highly charged with waste products and let us see whether such action, if indefinitely prolonged, might account for the condition of those who have habitually inhaled such an atmosphere. Turning, then, to the occupants of the out-patient waiting-room or to the population of the slum outside I think that we shall hardly be able to resist the conclusion that there are certain peculiarities in the aspect of these people which are far less evident in any gathering of country folk. The women and children of the out-patient room or the slum provide, perhaps, the most typical instances. The most casual observer will note that rosy cheeks are rare and that pallor is usual—a sallow or blue tinge being often combined with the pallor. Most of the women look older than their years; those above 30 years of age are either gaunt and haggard or flabbily fat and in the older ones pigmentation and coarseness of skin are almost universal. There is in many cases an appearance of inertness and lack of vitality as remarkable as it is difficult to describe. On closer examination feeble hearts and "inadequate" kidneys are found to be common. Among the children the muscular development is, as a rule, poor, especially as regards the lower limbs. Shapely, well-developed legs and feet are quite uncommon and a large proportion show signs of rickets. I hope that this description will be admitted to be fair. From the nature of their surroundings it can hardly be seriously questioned that the majority of these people habitually breathe air fouled by the volatile products of human waste. They are, I have good reason to believe, at least as well fed as the average of the country poor.

We know that induration from the growth of white fibrous tissue and pigmentation are the two most common changes brought about by repeated or prolonged passive hyperæmia. These older women show both changes in the coarsening and pigmentation of their skin to a marked degree. Most of them will tell us that they cannot walk fast or exert themselves much, that they are easily tired, and short of breath. And we can scarcely help admitting that lessened metabolism and resulting degeneration of protoplasm are the causes of the flabby muscles and feeble movement which are so common among them. In many of them the first heart sound at the apex is feeble, though there is usually no murmur, while there is strong ground for suspicion that degeneration has begun in the heart wall. The kidneys are probably "inadequate," in other words, fibrous, and fatty change is present in them.

"The narrows measure the river's flow,"

and it seems difficult to avoid the conclusion that permanent narrowing of the lumen of the arteriole, causing as it must do shortage of arterial supply, sluggish capillary and venous current, and therefore slow removal of waste, must inevitably lessen the metabolism and eventually cause the destruction of the starved and waste-ridden tissue cell. And be it remembered, even the meagre supply of arterial blood thus delivered is not a pure one. It has been fouled already in the pulmonary capillary by the immigration of foreign waste. It so far resembles the blood in the descending aorta of the fœtus, distributed to the lower limbs with results known to every student.

I have spoken of permanent diminution of the lumen of the arteriole, for it seems justifiable to suppose that the muscle of its wall will be no more exempt from degeneration than other tissues and that fibrous tissue will gradually take its place. If this be true we have the condition of arterio-capillary fibro-is not as a result of kidney change but as sharing with the immigration of foreign waste the responsibility of its production. But not only do the narrows control the volume of the stream, they also occasion ponding, and this ponding is greater where the fall of the river is less. So the smaller the arteriole and the feebler the heart the greater will be the dilation of the venous system. There will be ponding in the lung, the splanchnic area, and the veins of the pelvis and lower limbs. All will admit that these stout, flabby women are peculiarly subject to bronchitis, to dyspepsia, to varicose veins, and the like.

It is not suggested for a moment that all these changes take place without the intervention of micro-organisms. One can hardly conceive of small-celled infiltration without their aid; but it is suggested that these changes are initiated by volatile toxins absorbed by the lung. As to the undeveloped lower limbs of the children, attention was called many years ago to the length and slenderness of the arteries supplying the cauda equina, and it was suggested that the feebleness of the lower limbs so often observed in fat flabby women might be due to ready interference with the circulation through these long slender arteries. If we suppose the arterioles at the periphery of these vessels to be contracted in children who are habitually exposed to a foul atmosphere we have a condition of circulation which must seriously affect the nutrition and development of nerve, muscle, and bone. There appears to be no reason why the metabolism of the blood-forming tissues should not suffer with the rest. Anæmia is certainly the rule.

Lastly, what happier hunting-ground for bacteria can be imagined than waste-ridden tissues with an impure and restricted arterial supply. The temperature chart of a child suffering from hectic fever due to unremoveable tuberculous disease undergoes an extraordinary change on the child being transferred from the hospital ward to the verandah outside. The hectic fever usually goes as if by magic, often in 24 hours. I can only imagine that, given

restored arterial supply and absence of imported waste, the tissues are enabled to withstand even the combined assault of septic and tuberculous organisms. Every hoarding announces the recognition by the masses of our population of the need for improved development and increased vitality. "Frame food," "Force" food, "Phospherine," and countless other forms of profitable philanthropy in the shape of food and drugs are painfully obtrusive. What care we try to take, and very rightly, to prevent the admission of poison to the alimentary canal! How almost laughably anxious are many of us on the question of diet. The law very properly steps in to prevent the adulteration of our food and drink. Analysis fairly runs riot on behalf of our stomachs. But who cares for the purity of the air we breathe unless we happen to be tuberculous?

It is not many years since the House of Commons was gravely informed "against the stomach of its sense" that its air *must* be wholesome since but few pathogenic organisms could be found in it. We flood our rivers and pollute the sands of our health resorts with sewage. Patients not unfrequently tell us that seaside air is "too strong" for them. We ventilate our sewers into narrow streets, courts, and alleys at the road level, regardless of the close-set crowded dwellings so near at hand. As to our living- and sleeping-rooms we most of us ventilate them not at all in the sense of clearing out waste products. One is tempted to wonder if the ills usually ascribed to the high pressure of modern civilisation may not be more justly attributed to the high potentiality of the toxins given off by our crowded populations. This question must from its very nature be either utterly fatuous or of truly vital importance. If a negative cannot be returned to it without a shade of hesitation its discussion is obviously most urgently needed. Discussion, experiment, and research must come sooner or later. We may then get an answer to the query, Can the respirable products of human waste hinder development and lower vitality?

Darlington.

ICHTHYOL IN THE TREATMENT OF PULMONARY DISEASE.[1]

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EVER since I became acquainted with ichthyol this substance has had a special interest for me. The more I study it the more distinctly do I understand its therapeutic value and its indications in the treatment of disease. My earliest use of it was in gynæcological cases in the form of tampons, and the success achieved in this connexion encouraged me to make a thorough investigation into its composition. The result was that I turned my attention almost entirely to the internal administration of ichthyol, and more particularly I made a study of its use in affections of the respiratory tract. During the past two years I have devoted much time and attention to the subject and I shall now endeavour to place before you as clearly as I can the results of my observations.

It may be well at the outset to describe very briefly the substance under consideration, and I trust you will not consider me too pedantic in doing so. Ichthyol or ammonium ichthyolate, as it is more correctly termed, is a definite chemical compound. It is obtained by acting upon a crude mineral oil derived from a special variety of bituminous quartz[2] by destructive distillation. This oil is treated with strong sulphuric acid, the product thus obtained being ichthyo-sulphuric or sulpho-ichthyolic acid, a dibasic acid. This acid is in turn neutralised by ammonium and ichthyolate of ammonium or ichthyol is the result. Ichthyol itself is a thick liquid substance of dark brown colour. It has a characteristic taste and odour, the latter being due to the presence of a volatile oil. Ichthyol is readily soluble in water. The crude oil before being acted on by sulphuric acid has the following composition: carbon, 77·25 per cent.; sulphur, 10·72 per cent.; hydrogen, 10·72 per cent.; and nitrogen, 1·10 per cent. Ichthyol itself is usually stated to contain from 15 to 16 per cent. of sulphur.

So far as I have been able to gather, the first mention of ichthyol as a therapeutic agent was by Unna who described its action in certain skin conditions as far back as 1883. It certainly became known to the profession from its use in dermatological and in gynæcological affections. Its internal employment came later and was for some time much praised. At present it is held in high esteem as an external medicament, but I fear that its internal administration is not regarded very favourably by the majority of practitioners. I cannot help thinking that the cause of this is not far to seek. It has very often been given in altogether unsuitable cases and for too short a period, so that with but few exceptions those who have tried it as an internal remedy have failed to derive good results and hence they have unjustly condemned it. I hope to be able to show you that ichthyol is of much service in the treatment of suitable cases of pulmonary disease. I shall first of all present you with a statement of the nature of the cases in which I employed it, together with some account of the results obtained, and then I shall refer at some length to the *rationale* of its action when given internally.

The majority of cases in which I used ichthyol internally were those of pulmonary tuberculosis and consequently my remarks will have very special reference to its employment in this disease. At the same time I have had definite results from its use in two cases of bronchiectasis and also in some cases of bronchitis, acute as well as chronic. Much benefit has also resulted from its use in cases of pulmonary fibrosis of pure type, apart, that is, from secondary tuberculous infection. All my cases of pulmonary tuberculosis were of the ordinary slow, progressive, and chronic type. They were in number 13 and varied in age from 18 to 39 years. As regards sex, four were females, the rest being males. At the commencement of treatment the tubercle bacillus was present in the sputum of each and in some cases was very abundantly present. No other drug save ichthyol was prescribed in any of the cases and the hygienic environment was not always the best possible. All the patients were under my personal observation for at least six months, some of them even for a longer period, so that a definite statement can readily be given as to the benefits derived from this form of treatment. Of the 13 cases referred to 11 were distinctly improved. Only two failed, after prolonged treatment, to show any beneficial results. The two latter were both very advanced cases and in one both lungs were extensively involved. In the remarks that follow I shall therefore confine my attention entirely to the results obtained in the 11 successful cases and shall disregard the other two entirely. A summary of the results obtained at the end of each month may be put down as follows. At the end of the first month of treatment I found that in six of the cases the cough was less harassing, while the other five showed no marked improvement. At the end of the second month every one showed distinct improvement as regards cough, while in eight the expectoration was either appreciably less in amount or both less in amount and easier of expulsion. Only one of the cases showed absence of night-sweating, all the others still complained of it to a greater or less extent. By the end of the third month seven of the patients were so far improved that no night-sweating was to be noticed. At the end of the fourth month of treatment night-sweating was entirely absent in every case, while only a slight cough remained. The expectoration had now become very scanty in amount and that chiefly in the mornings. Its expulsion was now quite easy and caused no distress as it formerly had done. Towards the end of the fifth month all my cases showed a continued improvement and on auscultation I noted especially the absence of moist sounds, though on percussion dulness was still in evidence, but in some cases was not so extensive as it had been at the start. By the end of the sixth month every one had gained in weight to the extent of from three to seven pounds. Speaking generally, the younger the patient the greater was the gain in weight. The average increase in weight was 4·9 pounds, or somewhat less than one pound per month.

It is important to observe the sequence of events in the history of the patients' progress towards recovery as indicated in the foregoing statement. The first sign of improvement was in respect to the cough, always a troublesome symptom in these cases. In the majority marked improvement, so far as cough was concerned, showed itself by the

[1] A paper read before the Therapeutical Society of London on Feb. 17th, 1903.

[2] A deposit of fossil fish found in the Tyrol Mountains.

end of the first month of treatment, while in every case before the end of the second month it was distinctly less harassing and troublesome. Whereas previously the patient had been kept awake from this cause, this disturbing element was entirely eliminated, and in consequence undisturbed sleep was obtained. With lessening of the cough came improvement in the expectoration, and that in two very definite directions. It became less in amount and also became less viscid and consequently easier of expulsion. In all my cases this was observed by the end of the third month, while in many a great improvement in the amount and nature of the expectoration was noted as early as the second month of treatment. No night-sweating was ever seen in any of the cases after the end of the fourth month and in some instances it was entirely absent before the end of the third month. Gain in weight was not, as a rule, observed until the patient had been under treatment for a considerable period, though two of the cases began to show an increase in weight about the end of the tenth week. At any rate, in six months' time all had gained in weight and put on flesh. In every case there was marked nutritional improvement and food was taken with greater relish than hitherto. Any gastric discomfort that had been present when the patients first came under treatment had entirely gone and altogether there was marked improvement in their general condition as well as in the pulmonary phenomena. Apart from gain in weight I cannot say that in my experience the younger the patient the earlier did improvement commence to show itself, nor, indeed, was the ultimate benefit greater in proportion to the youth of the patient. Age did not seem to count for much so far as treatment by ichthyol was concerned. More depended, I think, on the severity and extent of the pulmonary lesion and on the loss of nutrition that existed when the patient came under treatment. The graver the lesion and the greater the lack of nutrition the longer did ichthyol take to exert its beneficial influence.

Now I would not have any of you infer from my remarks that I claim to have cured any of my cases by administering ichthyol. Far from it, for no drug will, in my opinion, cure pulmonary tuberculosis. All that drugs can do in such cases is to arrest the disease, not to eradicate it. This I feel certain that ichthyol can and will do if properly administered. More must never be expected of it. I firmly believe that open-air treatment is the one and only hopeful mode of dealing with pulmonary tuberculosis, still I would have you bear in mind that at the present moment not all such cases can be sent straightway to a sanatorium. And this for two very cogent reasons: (1) because there are no immediate vacancies in many instances; and (2) because at the time the patients are probably not in a satisfactory condition to benefit by such treatment. With the first of these reasons we have nothing for the present to do. We certainly are in urgent need of more accommodation, but we can remedy the second defect. By placing such patients under a regimen of rest with, if practicable, daily massage and by administering ichthyol we may render them suitable for admission to a sanatorium.

But I now pass on to the consideration of two cases of bronchiectasis which I beneficially treated by means of ichthyol. In both cases the condition followed on chronic bronchitis. The most prominent symptoms were paroxysmal cough, with very abundant, fœtid expectoration. In one of the cases a history of slight hæmoptysis was obtained. When they came under treatment both patients showed considerable loss of flesh and had a remittent form of temperature. On percussion distinct dulness was obtained, with distant tubular breath sounds on auscultation, showing that the tubes were full of secretion; after a paroxysm of coughing and free expectoration the resonance became almost tympanitic, while the breathing was more markedly tubular and accompanied by coarse metallic râles. In cases of bronchiectasis I think one of the first essentials in the treatment is to obtain a regular expulsion of the fœtid material blocking up the tubes and poisoning the patient's blood. This I found ichthyol to accomplish in a very satisfactory manner. After a month's treatment the paroxysmal nature of the cough became less marked, while the percussion dulness grew less distinct. In three months the cough and expectoration were less troublesome, and the extremely fœtid character of the latter was scarcely noticeable. The patients were now gaining weight and were taking more nourishment. The temperature had also ceased to show its original remittent character. Dr. W. Ewart of St. George's Hospital has recorded[3] two interesting cases of bronchiectasis treated by postural exercises and ichthyol. The patients gained considerably in strength and in weight under this combined method of treatment. These, taken in connexion with the two cases which were under my care, go to prove the value of ichthyol in this very troublesome disease.

I should also like to refer to the use of ichthyol in the treatment of chronic pulmonary fibrosis as seen in stonemasons (i.e., stone-hewers). In such cases the chief symptoms are dyspnœa, cough with expectoration which is specially troublesome in the mornings, and gradual loss of nutrition. As a rule, so far as my experience goes, the tubercle bacillus sooner or later finds an entrance to the weakened pulmonary tissue, so that patients of this class seldom attain the age of 45 years. I have treated several of these cases for a time with ichthyol. In every case I found that the cough became less troublesome and the expectoration easier and less in amount. The general nutrition of the patients was improved and appetite, which was very poor in every case, gradually returned. Unfortunately, none of my cases admitted of careful and systematic treatment being carried out, as they could not be made to realise the importance of continuing the medicine. Still, from the experience I have had of these cases I feel bound to say that ichthyol is a most suitable remedy. Ichthyol has likewise proved itself of value in one or two cases of chronic bronchitis in which I have tried it, while in acute cases where the cough and expectoration were causing trouble ichthyol has stopped the paroxysms and caused the expectoration to become less difficult to expel. In pneumonia the cough is always more or less paroxysmal in character, while the expectoration at the height of the disease is very tenacious and viscid. Here, then, one would naturally find in ichthyol a suitable therapeutic agent, but it would be impossible, for various reasons, to administer a sufficient quantity even in capsule form to patients so acutely ill. Hence I have contented myself with studying its action during the resolution stage of this disease. I think I am right in stating that ichthyol is of value if administered after the temperature has been reduced, as it then seems to hasten resolution and to bring about a return of the lung to normal

It may now be advantageous to say a few words regarding the dosage and mode of administration of ichthyol. Generally speaking, the amount given varied from eight to 20 grains four times per day. I always gave it in capsule form, each capsule containing four grains of ichthyol. As a rule, in every case I started with two capsules four times a day and then gradually increased the amount until five capsules were taken four times daily, this being the maximum limit. In other words, each patient got from 32 to 80 grains per day. This may seem a somewhat large amount, but it was tolerated in most cases when the drug was administered in the form of capsules. To some patients I found that the appearance of the capsule was somewhat repugnant, and after swallowing one they had considerable difficulty in taking a second, as the mere act of placing it in the mouth seemed reflexly to produce nausea. Apart from this I have never observed any nausea or sickness produced after ichthyol capsules were taken into the stomach, although some of the opponents of the drug state definitely that ichthyol is not tolerated by the stomach.

Dr. Heinrich Fraenkel in his treatment of pulmonary tuberculosis by means of ichthyol (of which a full account is published in the *American Journal of the Medical Sciences* for September, 1897) employed a solution containing equal parts of ichthyol and distilled water flavoured with oil of peppermint. He found that the odour and taste of this mixture caused nausea and even vomiting in sensitive individuals but never produced any true gastric irritation. If, however, gelatin capsules are prescribed, then, as already pointed out, no such phenomena are observed. Certainly, in my opinion, ichthyol does not in the slightest degree cause any irritation of the gastric mucous membrane, or if in a few anomalous cases it does produce slight inconvenience it is not nearly so great as that induced by creasote. I think anyone who has had any experience with both ichthyol and creasote will at once admit the truth of this assertion. I can quite readily understand trouble arising if ichthyol be given in solution and hence I would insist that in all cases the administration by means of capsules be selected. Sodium ichthyol may be substituted

[3] THE LANCET, July 13th, 1901, p. 70.

for ammonium ichthyol if thought desirable, but in my experience it is not nearly so active. It is more suited for gastric cases with fermentation than for patients suffering from pulmonary disease.

I now hurry on to consider the mode of action of ichthyol when given internally. How is it that ichthyol exerts a beneficial influence when administered to patients suffering from pulmonary disease? I shall endeavour to answer this question as clearly as I can and in as simple a manner as possible. I stated at the very outset of this paper that in some quarters the internal administration of ichthyol had fallen into disrepute. It has done so partly because it was given indiscriminately and in too small doses, but more especially, I think, because erroneous ideas have hitherto existed as to its mode of action. Thus Professor Amory Hare of Philadelphia states that it is largely upon the amount of sulphur it contains that the therapeutic action of ichthyol depends and he states the dose as being from one to ten grains in pill form. I hope to show you that this is by no means the whole truth regarding its mode of action. I conceive that it is possible for ichthyol to act in three distinct ways: (1) it may act as an antiseptic agent on the tubercle bacilli or other organisms that may be present in the diseased parts; (2) it may act upon the general nutrition of the body; and (3) it may act on the local lesion itself. Let us consider each in turn and see how far ichthyol asserts its influence in each of these specific directions.

1. *How far does it act as an antiseptic?*—I am afraid we must admit that its action in this direction is extremely feeble, if, indeed, it is at all in evidence. So far, I have been unable to obtain satisfactory proof that it does. I have found tubercle bacilli in the sputum of patients six months after they commenced taking ichthyol and who were still under treatment at the time of examination. In my opinion it is hopeless to attempt to ameliorate cases of pulmonary disease by giving drugs with a view to destroying the organisms present. Up to the present no proof has been brought forward in support of the contention that any known antiseptic has this power. So it is with regard to ichthyol. Taking tuberculous disease alone we must admit the truth of Dr. Kingston Fowler's statement that "the evidence at present available tends to show that no antiseptic agent can be administered internally in sufficient doses to kill the tubercle bacilli in the lungs." Hence I think it is absolutely absurd to place credence in statements that have been, and are still being, made to the effect that the organisms within the diseased area have been entirely destroyed by means of creasote or some of its preparations. I am aware that it has been wrongly claimed for ichthyol that it acts in this way. I do not for a moment believe that it does; or if it does act in this way careful personal observation has failed to detect any antiseptic effect. I for one certainly maintain that we must look for the real action of ichthyol in quite another direction.

2. *How far does it act upon the general nutrition?*—If gain in weight is taken as evidence of increased nutrition then we may say, with a feeling of confidence, that ichthyol beneficially influences the nutrition of the body. Appetite also improves during its administration. How, then, does nutrition come to be affected by ichthyol? Is this part of its action due to the amount of sulphur it contains? I answer "Yes" to a small extent, but not altogether. Ichthyol is more than sulphur. It is, as already pointed out, a definite chemical compound—a fact which seems to be quite lost sight of by Hare and others in considering its therapeutic action. It would require a very clever biological chemist, and one with very intimate knowledge of the chemico-physiological processes of the human organism, to say how it is that ichthyol comes to act upon nutrition. But the fact that it does so act is evident. I would say again that this action is not due to the sulphur present but simply to the sum total of the elements which go to make it up. It is highly probable, therefore, that ichthyol is of service in pulmonary disease by raising the nutritive force, and so increasing the resisting power of the tissues against the action of the specific toxins present; or, at all events, it may so modify them that they become less active and virulent. Now it is well known that sulphur exerts but little physiological influence over the general system. It certainly modifies nutrition in some way or other, but is mainly an alterative, whatever be the meaning attached to this vague and unscientific term.

3. *The contention that its chief mode of action is its specific action on the local lesion itself.*—Ichthyol acts as a vaso-constrictor, and relieves and removes congestion and inflammation. This I maintain is its true mode of action when given internally in pulmonary disease. Most of you, I know, will readily allow that ichthyol is of service in reducing the local inflammation in cases of acute rheumatism and of erysipelas. In chronic skin affections it is also beneficial. So, too, in pelvic and peri-uterine exudations and inflammations much good results from its employment. How does it act in these cases? Simply by constricting the blood vessels and reducing the inflammation and removing any exudation that may be present. So, too, in cases of pulmonary disease, it acts locally upon the inflamed and ulcerated surfaces and so produces very beneficial results. In pulmonary tuberculosis we find a process of inflammation going on. Ichthyol has the power of modifying this, and by virtue of its action as a vaso-constrictor further exudation and inflammation are prevented. Once we grasp the idea that ichthyol acts as a vaso-constrictor (and already it is granted that it acts thus when applied externally) the prejudice against its internal use will vanish. Allan Jamieson, referring to ichthyol at the dermatological section of the British Medical Association in 1898, quoting Leistikow, stated that in erysipelas ichthyol acted by initiating a process of contraction and as a reducing agent, so that "an agreeable feeling of coolness is at once experienced, the further progress is arrested, and simultaneously the fever and other disturbances abate. The treatment of erysipelas by strong ichthyol ointments affords one of the best examples of medicinal rest to an inflamed skin that can be cited." In gynæcological conditions, likewise, ichthyol is serviceable only in those cases where an inflammatory condition exists. In the *Edinburgh Medical Journal* for April, 1896, Dr. Robert Bell, physician to the Glasgow Hospital for Women, in writing on the subject of ichthyol in gynæcology sums up his remarks by saying: "We have a most reliable and almost uniformly potent therapeutic agent in ichthyol where inflammatory conditions of the uterine appendages exist."

From what I have already said you will not be surprised that I should differ from those who attribute the beneficial effects of ichthyol solely to the percentage of sulphur it contains and likewise from those who maintain that its action is largely an antiseptic one. My firm conviction is that it is distinctly an anti-inflammatory agent. Besides this action, however, I found that it is to some extent an antispasmodic and so relieves cough. This part of its action may be due to the contained sulphur, as the latter has the power "in cases of excessive bronchial secretion of ridding the lungs of mucus and relieving cough" (Hare). When sulphur is taken internally we know that it is eliminated from the pulmonary vessels, and so it must exert a certain amount of influence. But though ichthyol does contain sulphur I do not think we are warranted in attributing its beneficial effects in pulmonary disease merely to the presence of that element in its composition.

Although in the course of my remarks on the mode of action of ichthyol I have chiefly confined my attention to pulmonary tuberculosis I would ask you to remember that in bronchitis, bronchiectasis, and in fibroid disease inflammation is present to a greater or less degree. Ichthyol, therefore, is indicated in such conditions, and in these cases does good by reducing inflammation and by aiding in the removal of inflammatory products. The chief interest, however, centres round its internal administration in pulmonary tuberculosis. Whereas creasote, guaiacol carbonate, and other creasote preparations, when given in large doses, often produce gastric distress and frequently nausea and vomiting, ichthyol, when given in capsule form, never does so. Ichthyol is absolutely devoid of irritating properties so far as the gastric mucous membrane is concerned. In fact, I have often found it soothing rather than otherwise. In one of my cases creasote had previously been given with the result that the digestion was entirely upset and the appetite gone. When, however, ichthyol was substituted the stomach became less irritable and the patient's appetite gradually returned. Doubtless open-air treatment is the ideal to be aimed at in pulmonary tuberculosis, still, as already hinted at, there are many cases in which we can only, for a time at least, have recourse to drugs. In such cases ichthyol should be given a fair trial. To succeed we must give it in fairly large doses and we must persevere in its administration. Some authorities consider 12 months as the shortest limit of administration. My own experience goes to prove that definite results can usually be obtained after six months' persistent and careful treatment. Not infrequently cases fail to improve for

the reason that too small doses are given, or because the treatment is not carried out faithfully and systematically. Then, again, it is essential that we should select only such cases as are likely to benefit. One can hardly expect good results to follow the administration of ichthyol in cases where both lungs are riddled with tuberculous cavities. Here exhaustion and emaciation are so extreme that nothing can stay the onward and steady progress to death. To say that ichthyol is valueless because it has failed in such cases is to display our own ignorance in looking for success in such hopeless circumstances. Ichthyol is not a curative substance; it is a palliative agent. It acts by direct local influence on the areas involved, reducing inflammation and getting rid of the foreign matter present. It does not kill the organisms but it renders their toxins much less active and virulent.

I trust that these imperfect remarks will stimulate those of you who may not have given ichthyol a fair trial in pulmonary disease to investigate it more closely, and even if you see fit to differ from me in regard to its mode of action still I shall not feel that the time spent in coming here this evening has been spent in vain.

Edinburgh.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, HAMPSTEAD.

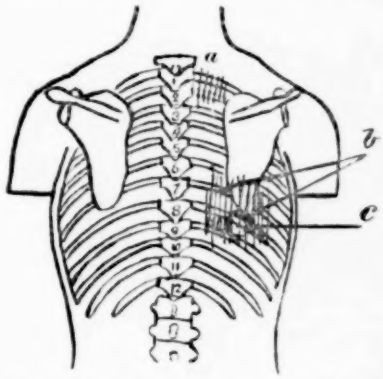
A CASE OF HYDATID DISEASE OF THE LUNG; SPONTANEOUS RECOVERY.

(Under the care of Dr. J. EDWARD SQUIRE.)

FOR the notes of the case we are indebted to Mr. Sydney R. Williams, senior resident medical officer and registrar.

The patient, a well-nourished single woman, aged 22 years, was admitted to the Mount Vernon Hospital, Hampstead, on Feb. 11th, 1903. On Feb. 9th, whilst teaching in school, she had a severe fit of coughing which lasted for about 20 minutes and brought up a piece of membrane of about the "size of the palm of the hand" which at once relieved the cough and the choking sensation which accompanied it. The previous history was that she was quite strong until the early part of 1901 when she was operated on for tuberculous disease of the ankle-joint. A little later in the year whilst singing she "felt something give way in her chest" and on the next morning she began to cough and brought up about three ounces of bright-red blood and afterwards some blood-stained froth. In November, 1901, she had influenza with pneumonia and pleurisy and was ill for six weeks and again brought up bright-coloured blood several times. She resumed work after Easter, 1902, feeling quite strong. She occasionally expectorated blood-stained phlegm and in December, 1902, again brought up some pure blood and was sent to see Dr. J. E. Squire. She continued at work until Feb. 9th when after a severe fit of coughing she brought up a large piece of membrane.

On admission to hospital she was still coughing up shreds of membrane. She had never been out of England and careful inquiry failed to elicit evidence of any fluid ever having been expectorated or vomited. On examination deficient movement and expansion were noticed on the right side. There was dulness on percussion above the right clavicle extending down to the upper border of the second rib and in the supraspinous fossa. Over this area the breath sounds were bronchial in character and vocal resonance was increased, but there were no adventitious sounds heard. At the right base there was dulness, commencing above at the sixth rib in the line of the angle of the scapula and extending down to the lower border of the ninth rib. This patch of dulness extended to within two inches of the spine and outwards as far as the posterior axillary line. Vocal fremitus was absent over it, except over a spot of the size of a crown-piece immediately below the angle of the scapula in the eighth intercostal space. In this small area the breath sounds were distinctly tubular, vocal resonance was bronchophonic, and whispering pectoriloquy was present. Over the rest of the dull area the breath sounds were absent as well as vocal fremitus and vocal resonance. Examination with the fluorescent screen showed a deep shadow in the position of the dull area with a lighter spot at its lower part corresponding with the small area over which the breath sounds were tubular. The patient continued to cough up shreds of membrane for a week after admission, until Feb. 18th. On one occasion a piece about two square inches in size was coughed up and this was distinctly laminated in structure. In no instance were any daughter cysts or hooklets discovered, though careful search was repeatedly made. On March 3rd the breath sounds were more tubular and much louder, pectoriloquy was more marked below the angle of the scapula, and the area of dulness had considerably diminished. The patient remained in the hospital until March 24th but no shreds of membrane were coughed up after Feb. 18th.



Posterior view. *a*, Dulness in supra-spinous fossa. *b*, Upper level of dulness at base. *c*, Area of bronchophony and pectoriloquy.

Remarks by Dr. SQUIRE.—The patient was sent to me on Dec. 24th, 1902, by Mr. E. Waggett because she had for some time occasionally expectorated blood-stained frothy mucus and bright blood. On physical examination the right shoulder was found to be lower than the left, due to the manner of standing. There was diminished respiration movement, with dulness and absence of breath sounds, vocal fremitus and vocal resonance at the right base both front and back. The heart sounds were conducted round the base. Below the right clavicle the breath sounds were tubular in character and the expiratory sound was prolonged. There were no râles. The signs at the base indicating fluid, with a history of previous pleurisy, I naturally concluded that there was some unabsorbed pleural effusion and the conduction of the heart sounds suggested thickened pleura. With a tuberculous history and some tubular breathing at the apex I suspected a tuberculous pleurisy and advised that no attempt should be made to remove the fluid by aspiration. I also asked the patient to take her temperature regularly morning and evening and to bring the chart to me in a month's time. A somewhat irregular chart lent support to the diagnosis of tuberculosis. On Feb. 10th Mr. Waggett sent me some pieces of thick laminated membrane which the patient had coughed up on the previous day and which were apparently portions of the wall of a hydatid cyst. The nature of the case was now clear and as the patient was in some danger of suffocation if any pieces of membrane became fixed in the trachea or the larynx, I had her admitted to the hospital as an emergency case. Her history whilst in the hospital is detailed above by Mr. Williams and I saw her again on April 18th when she expressed herself as feeling perfectly well and certainly looked the picture of health.

Hydatid disease is comparatively rare in this country and a record of any case would be justified by this circumstance alone. There are, however, some special points of interest

in this case. Firstly, as to the cause. The patient has aways lived near London and has never been abroad. The only possible source of infection seems to have been a pet dog which lives with the patient and which some few years ago was much troubled with tape-worm. Secondly, the course of the disease and the rupture of the cyst. That the true nature of the disease was not recognised before rupture of the cyst is hardly a matter for surprise, seeing that hydatid disease of the lung is rare and that there are several points in the medical history which obscured the clinical picture. The tuberculous disease of the ankle and the history of influenza and pleurisy seemed to furnish a sufficient explanation of the symptoms and physical signs. When did the cyst rupture? In most of the recorded instances of this occurrence there is a sudden gush of fluid through the air-tubes which threatens to suffocate or to drown the patient. No such escape of fluid occurred at any time in this case. Was the pleurisy diagnosed in November, 1901, really a collection of fluid which had escaped from the cyst into the pleural cavity? There are certain facts which lend support to such a supposition: (1) the absence of any fluid expelled from the mouth; (2) the fact, ascertained after the large pieces of membrane had been coughed up, that the patient had during a year or more occasionally coughed up small shreds of membrane suggesting rupture of the cyst some time ago; and (3) the feeling of something giving way within the chest whilst singing, followed by hæmoptysis. Both the hæmoptysis and the pleurisy may have been due to tuberculosis and the hydatid cyst in the lung may have had no connexion with these accidents. The condition of the apex of the right lung seemed to indicate the presence there of tuberculosis.

The satisfactory result of the natural cure of the disease is also interesting. The physical signs before the patient left the hospital and on her subsequent visit to me indicated that a smooth-walled cavity containing air only was left and that this was contracting.

LEEDS GENERAL INFIRMARY.

A CASE OF TRIFID STOMACH.

(Under the care of Mr. B. G. A. MOYNIHAN.)

THE patient, a woman, aged 27 years, was sent to the Leeds General Infirmary by Mr. Arthur Knowles of Halifax. Nine years ago the patient, a thin, sallow-looking woman, began to suffer from pain after food and vomiting. The first "attack" came on quite suddenly when she was apparently in good health; the vomit was then copious and deeply tinged with blood. At repeated intervals since this there had been other "attacks" in all of which there had been vomiting, and on one or two occasions blood in small quantity had been ejected. The pain had been noticed after all foods, generally within an hour of a meal. All solids had been withheld for over 12 months on account of the pain which they caused. In her present condition she was constantly suffering from "indigestion." Even a drink of milk caused some pain, and every day or two there was an outbreak of severe vomiting. The fluid ejected was sour and at times very offensive. During the last four months there had been an increase in the symptoms and she had been losing weight rapidly. An examination of the abdomen was made; the stomach was inflated and subsequently washed out. On the following grounds a diagnosis of hour-glass stomach was made: 1. On washing out the stomach only 16 ounces were returned for every pint introduced. At the first washing five pints were used and four were returned. 2. An examination then revealed a succussion splash and "paradoxical dilatation." 3. On inflation there was a large increase in the subcostal tympany and the distension of the stomach in the epigastrium was observed much later than is the rule. 4. A loud, sizzling forcing sound was heard over the left end of the stomach during this delayed distension of the epigastrium.

The abdomen was opened on Nov. 29th, 1902, and the stomach was exposed. An hour-glass stomach was at once recognised. There were two pouches with a constriction which just admitted the middle finger between them. The pyloric pouch was about equal in size to a small cocoanut; the pouch towards the cardia was of the size of a normal stomach. The stomach was then explored up towards the cardiac orifice, with the result that another constriction and another pouch were exposed. This constriction would only just admit the tip of the little finger. The pouch beyond it was rather bigger than the middle compartment of the stomach.

Semi-diagrammatic representation of the trifid stomach.

The cardiac pouch, it may be noticed, is drawn smaller than it actually was, as most of it was not pulled outside the abdomen; the figure was drawn by Mr. W. C. Mayo who was administering the anæsthetic. There were thus three pouches in the stomach separated by two constrictions. Both constrictions showed considerable induration and some puckering, the result of old ulceration. To remedy the defects the first pouch was united to the second by the operation of gastro gastrostomy, an opening being made that would admit three fingers easily; the second pouch was united to the jejunum by a posterior gastro-enterostomy; and the constriction between the second and third pouches was well dilated with the fingers. The patient's recovery was without incident. She left the infirmary on the twenty-third day after the operation and had been taking ordinary diet for a few days before this.

Remarks by Mr. MOYNIHAN.—This case is the only one recorded in which a trifid stomach, the result of the contraction of old ulcers in the stomach, has been found. Clinically the case was one of inveterate dyspepsia with recent increase in the severity of the symptoms and with recent rapid loss of weight. A diagnosis of hour-glass stomach was made and at the beginning of the operation it was supposed that this diagnosis was confirmed. But I never begin any operation upon the stomach until I have exposed the whole viscus and until I have examined and handled the organ quite up to the cardiac orifice. It is only by acting upon such a resolve that one avoids the error of uniting the pyloric pouch of an hour glass stomach to the jejunum. Hour-glass stomach is more common than is supposed. Including this case I have operated upon 16 patients affected with this disease; in 14 the constriction was due to chronic ulceration and in two to malignant disease. Mr. Knowles, who kindly sent the patient to me, writes to me that it "was owing to reading the previous recorded cases of yours in THE LANCET[1] that I was led to press the patient to come to you for operation. I felt sure she had an 'hour-glass stomach.'"

[1] THE LANCET, April 27th, 1901, p. 1190.

Reviews and Notices of Books.

The Diseases of Infancy and Childhood. By HENRY KOPLIK, M.D. London: Henry Kimpton. 1903. Pp. 675. Illustrated. Price 21*s*.

THIS new text-book on the diseases of infancy and childhood will be read with considerable interest in this country where Dr. Henry Koplik's name is so well known in connexion with what is very generally regarded as the pathognomonic sign of measles. Dr. Koplik, though, perhaps, most famous for his investigations in that branch of medicine which is concerned with specific fevers, has had a very wide experience in the general diseases of infancy and childhood, but heretofore he has not attempted to give others the benefit of his experience by writing a work which covers the whole ground of the medical diseases which affect young people. This book must be regarded in every sense as a complete and up-to-date treatise of the diseases of children. The space allocated to the various subjects is equably and judiciously apportioned and the chapters on the special infective diseases, which, owing to the author's special knowledge, might reasonably have received conspicuous attention, are neither unduly prominent nor disproportionately long. The mere fact that these chapters conform in all respects to the systematic design of the whole proves that Dr. Koplik's object in writing this book was to prepare a work which would be of general use to students and practitioners. The author's prefatory *apologia* for the publication of this recent addition to the already extensive library of books which deal with the same subject is therefore unnecessary, but when he adds that "the literature in the domain of pediatrics is largely inaccessible to those conversant with the English language alone" we may point out that there have recently been published at least four new editions of works which have brought the literature of the subject as satisfactorily up to date as does the volume under review. The value of Dr. Koplik's work in our opinion does not rest on its merits as a compilation but on its just claim as a document of personal observation and original and independent mind.

The first chapter, hich describes the general examination of the patient, his development, and management, deals with questions in pediatrics which from a critical standpoint give better indications of an author's powers of observation and capacity for literary description than do the more or less routine accounts of the less definite diseases which are common to all periods of life. It is one thing to know a subject and another matter altogether to write about it intelligently and intelligibly, indeed many an able clinician has come signally to grief when he has laid down his stethoscope and has taken up his pen. The author describes in considerable detail the management of breast feeding and his account of the medical examination and selection of wet nurses will be found invaluable to medical men on whom this responsibility devolves. With regard to the general management of infants Dr. Koplik is clearly no advocate of the "hardening" system. His directions for the temperature at which nurseries should be kept and baths given would assuredly absolve him from the reproach of applying Spartan methods. It might perhaps be urged with some degree of justification that however necessary the measures which Dr. Koplik suggests might be in the case of genuinely delicate infants, if applied in the case of infants who are initially robust there might be some risk of the latter developing into individuals for whom this hot-house system might be urgently required. This, however, is a matter with regard to which mothers and nurses will continue to exercise their own judgment in spite of Dr. Koplik and in spite of other authorities who do not agree with him. With regard to the artificial feeding of infants it is almost refreshing to find that the author has no strong views in favour of any particular system, and although he recommends the application of the percentage method in the home modification of milk he is no advocate of the ultra refinements of which the method, according to other American authors, is apparently capable. Indeed, of so little importance does the percentage composition of different varieties of milk appear to be in the author's estimation that he makes the statement that asses' milk has a composition which is nearly identical with that of woman's.

Turning to the chapter which describes the specific infectious diseases it is impossible to avoid being impressed by the consummate and masterly skill with which this part of the work is handled; it would be difficult to find a better account of the efflorescences of the various rashes both on the skin and on the mucous membranes. Speaking of the rashes on mucous surfaces or enanthemata, as he calls them, which from time to time have been described as complicating the course of many of the specific fevers and which have been adduced as evidence against the specific character of the so-called Koplik's spots, the author says: "None of these are constant or characteristic of rötheln, but all are found in other affections. The buccal mucous membrane, however, is absolutely free from eruption of any kind and in this fact we have a valuable diagnostic distinction between this disease (German measles) and measles." Interpolated between pages 148 and 149 is the now famous coloured plate of Koplik's spots in various stages of their efflorescence, and for purposes of differential diagnosis a similar illustration of aphthous stomatitis, an inflammatory condition of the mucous membrane sometimes confounded with the author's pathognomonic spots.

It is scarcely necessary to follow Dr. Koplik in his description of many of the general diseases which are incidental to childhood. In his arrangement and classification he has adhered to the best traditions of American authors. No attempt has been made to discuss controversial views or obscure pathological problems. Throughout this book we have a plain, unvarnished description of the symptoms and treatment of the ordinary complaints met with in practice. But as we have already mentioned, it is for the individual manner in which Dr. Koplik regards the manifestation of disease in children and for the practical hints on treatment which his personal experience enables him to supply that this book will be chiefly valued.

Die Krankheiten der Warmen Länder: ein Handbuch für Aerzte. (*The Diseases of Warm Countries: a Handbook for Physicians.*) Von Dr. B. SCHEUBE, früherem Professor an der Medizinschule in Kioto. Third revised edition. Jena: Gustav Fischer. 1903. Pp. v. + 789. Plates and Maps. Price, paper cover, 16 marks; bound, 18 marks.

THE third edition of this truly encyclopædic work on Tropical Medicine lies before us for review. That it has been appreciated by those for whom it is intended as a guide is shown by the rapidity with which successive editions have been published, the second appearing in 1900, and this, the third, in 1903. It is impossible in the space at our command to do full justice to the work in its entirety, but a glance at it suffices to show that this new edition is thoroughly up to date, and to those who are able to read German it will be found to constitute *par excellence* the standard text-book on tropical diseases. There is only missing the description of one disease which we should have liked to be included—viz., heat stroke—whilst cholera is dismissed in but a few words. New sections on Filaria Volvulus, Rhabdonema Strongyloides, Leeches, Ground Itch, Veldt Sores, and Chappa are added. In the chapter on

Plague stress is laid on the systematic, periodical, and repeated extermination of rats in the prevention of the disease. In discussing the relative merits of the inoculation methods of Haffkine and Yersin the author finds the former to be the most efficacious. We are glad to find that Dr. Carlos Finlay is mentioned as being the first to draw attention to the mosquito theory of yellow fever in 1881. This observer caused the mosquito to sting a yellow fever patient and then to inoculate an individual previously free from the disease, with results showing infection in 22 out of 24 patients experimented on, the remaining two being lost sight of. In the recent establishment of the conveyance of the disease by mosquitoes Dr. Finlay's name has not had the prominence it deserves in this respect. Attention is drawn to the exhibition of arsenious acid as a prophylactic used by the Brazilian physicians and to the good results obtained therefrom, and from the method of preventive inoculation by means of mosquitoes as carried out by Dr. Finlay, which is also detailed.

The chapter on Malaria is brought fully up to date and fresh diagrams are added illustrating the mosquito causation of the disease; especial attention may be directed to one showing the development of the tertian parasite in man and in the anopheles. Lastly, the treatment of malaria in all its forms is exhaustively portrayed. In the chapter on Dysentery the relation of amœbæ to the disease receives full attention. Major W. J. Buchanan's results by treatment with salines are detailed. In the therapeusis of the chronic form by oleum terebinthinæ the name of the late Dr. Charles Ralfe is omitted as one of the pioneers of this method.

The sections dealing with the parasites are very complete. Thus Lelean's method of treating bilharzia with methylene blue is mentioned, whilst Bentley's theory of the causation of ground itch by the ankylostoma is detailed. In the treatment of Delhi boil we, however, do not find any mention of the most successful means of curing this affection as practised on the Indian frontier—viz., by the superposition of a strip of lead a little larger than the lesion. And finally, to show the thoroughness with which this edition has been brought up to date, it may be mentioned that the experience of veldt sores in the recent war has been utilised and a comprehensive chapter on this affection has been incorporated in this edition. We can only conclude a too brief review of this great work by advising all who practise in the tropics and have a knowledge of German to possess it.

Modern Bullet Wounds and Modern Treatment, with Special Regard to Long Bones and Joints, Field Appliances, and First Aid. By Major F. SMITH, D.S.O., R.A.M.C. London: J. and A. Churchill. 1903. Pp. 95. Price 3*s*.

THIS small volume is a part of the Alexander prize essay for 1903, a triennial prize instituted to perpetuate the memory of Thomas Alexander, C.B., Director-General of the Army Medical Department from 1858 to 1860. Major Smith has endeavoured to throw new light on the subject of "humane wounds" and has suggested a means of providing readier first aid. We think that this work will add to his reputation not only as a military surgeon but also as a thinker in the range of medico-military problems.

The subject of the essay was announced before the Boer war began, a war which has resulted in a great increase of our knowledge of bullet wounds. Major Smith summarises the prevailing opinions partly by the light of his own experience, omitting details which are the common knowledge of surgeons. For convenience he arranges the wounds of bones and joints in groups as follows: (1) contusions with injury to the periosteum but no fracture; (2) partial fractures not interfering much with the primary purpose of a bone as a portion of the framework of the body and as affording anchorage for muscles; (3) complete fractures; (4) comminuted fractures; (5) any of the foregoing involving a joint; and (6) injuries of joints without injury to bones.

Under the heading "Complete Fractures" he makes a comparison between the injuries which are met with in civil practice and in war and writes of the comparative frequency of acute septic affections of bone in military life. In Class 4—comminuted fractures—he deals with a type of injury to a great extent special and one of the most serious in the whole range of military surgery. He observes that "straining after conservatism" in the late war has been rewarded by marvellously changed results and that though the statistics are not yet available, yet opinions as to conservatism seem to be generally favourable. The better results are not evidenced merely in lessened mortality but in a reduced average period under hospital treatment. The author enumerates the influences which have combined to render the conservative plan of treating these fractures more hopeful. He lays stress on the excellent results found on the removal of field dressings. In the section on the Treatment of Comminuted Fractures Major Smith writes on the increasing importance of early diagnosis and of the importance of keeping cases of fracture in extemporised hospitals until the bones are set.

With regard to the injuries of joints, Major Smith points out that their importance from the surgical point of view is now held to be in proportion to the amount of bone injury: with reference to the knee-joint, that wounds are thought to be rather less serious than wounds of the shaft of a long bone. The section on the Injuries to Special Joints appears to us to be particularly good. Major Smith suggests that a few wooden splints should be again included in the appliances for actual field service and that hoop-iron should be added. In the section on First Aid the author points out that the hasty removal of wounded from the field really often does more harm than good; he urges that all soldiers should be properly trained in first aid and stretcher work; he advocates that every soldier should carry a red handkerchief to be displayed when wounded and, as the most grateful first aid is an injection of morphia, he thinks that bearers should be trained to give injections. We doubt the wisdom of this suggestion very seriously.

LIBRARY TABLE.

Life History Album. By FRANCIS GALTON, D.C.L., F.R.S. London: Macmillan and Co., Limited; New York: The Macmillan Company. 1903. Pp. 178 with nine charts. Price 5*s*. net.—This is the second edition of a useful work. The contents comprise a series of tables and charts for recording the development of the body and mind of a subject from youth upwards, so that if the various compartments are carefully filled up a very definite and detailed personal history results. The introductory remarks are from the pen of Dr. F. Galton. The album is intended for the use of persons of any age, however advanced, who may be inclined to begin to use it, but middle-aged folk would have to supply records of past years as best they could from their own memories or through information from their seniors. The special purpose of the book is to contain a complete family history which is best commenced by the parent of the infant, to be handed over to him or to her when arrived at years of discretion. There is no doubt that a series of albums containing accurately and faithfully compiled histories of many individuals would be of great value to the community from the sociological aspect, while it is also possible that such an album might lead to the detection and thwarting of the approach of preventable diseases. Dr. Galton does right to throw out a word of warning as to the trustworthiness of self-kept records. Addition and subtraction, he recognises, would inevitably be practised by a large number of autobiographers.

American Armoury and Blue-book. Edited by JOHN MATTHEWS, Member of the Pennsylvania Historical Society. London: Published by the Author, 93, Chancery-lane, W.C. 1903. Pp. 558. Price £2 2s. net.—The idea of an American Armoury and Blue-book cannot fail to strike accurate-minded people as odd. American civilisation dates from the time when armoury and heraldry had begun to lose all their uses and much of their significance. Again, the men who have been in the forefront of the development of the Republic of the United States trace, and used to take some pride in tracing, their origins from those classes in the old world who did not happen to be bearers of arms. This, at any rate, was the case with Americans of British origin save in the colonies of Maryland and Virginia. The settlers under the Plymouth Company and the London Company, and the historic Pilgrim Fathers certainly did not comprise many people with the right to use arms, and we do not believe that the Dutch and Swedish settlers were a whit more aristocratic in their origin. By what process certain American families have arrived at thinking that they possess the arms figured in the American Armoury and Blue-book we cannot, therefore, guess, but some of the pictures are very funny and the letterpress is in keeping with them.

Where Shall I Send my Patient? Published by the Association of Medical Men Receiving Resident Patients. 1903. Pp. 279.—This is a guide for medical practitioners who want assistance with regard to finding convalescent homes, asylums, nursing institutions, or sanatoriums for their patients. The book is published by an association of medical men who receive resident patients, which was formed some three or four years ago with the object of providing homes for persons of good social position suffering from any kind of ailment requiring the constant supervision of a medical practitioner as well as the comforts of home life. 126 medical men give details of the facilities which they have for the reception of resident patients and of their abilities to look after them. The names of the medical men are not given but a number and a corresponding *nom de plume* are published so that communications can be made through the honorary secretary of the association, whose address is Bodorgan Manor, Bournemouth. The idea of medical men coöperating in this way to make known to their medical colleagues their desire to receive a patient is a very sensible one, for it is particularly well known to us in this office that those who have facilities for receiving patients do not get quickly into touch with those who desire to find homes for patients.

The Charaka Club. Vol. I. New York: William Wood and Co. 1902. Pp. 97.—The Charaka Club is a small literary club organised some few years ago in New York by medical men interested in the artistic and historical aspects of medicine, the idea being to find recreation in meeting together to read and to discuss papers. The first volume of the proceedings of the club contains a selection of the papers that have been read and show the association to be inspired with something of the same blended spirit of seriousness and banter that used to distinguish the now defunct Rabelais Club. The essay entitled "The Evil spoken of Physicians," by Charles L. Dana, brings together some of the many bitter criticisms of our profession to which numerous great readers and thinkers have committed themselves since the compiler of the Chronicles recorded that Asa "sought not to the Lord, but to the physicians; and Asa slept with his fathers." Mr. Dana has brought together similar examples from Bacon, Pascal, Balzac, Molière, Arnold, Byron, Montaigne, and others, to show how numerous are the satirical comments of literary men upon physicians and surgeons. Another interesting paper is from the pen of the same author and describes at some length the Cult of Æsculapius. The story of the man who wished to hypnotise, by Mr. Joseph Collins, is witty if a little nasty.

MEDICINE AND THE LAW.

The Price of a Medical Practice.

IN the King's Bench Division an action was concluded on July 30th between Mr. E. K. Houchin, of Ilford, Essex, and Mr. John Marshall, of Stepney, in which Mr. Houchin sued Mr. Marshall for £987, balance of the purchase price of £2000 which the latter had agreed to pay for the plaintiff's practice in Stepney. The defendant admitted the agreement to purchase at the price named and that the balance was still unpaid, but pleaded in defence that he had been induced to purchase by the plaintiff's misrepresentations as to the value of the practice. These, he alleged, consisted principally in the statement that the average annual receipts of the practice exceeded £2000 a year and also that Stepney was a good and improving district. With regard to the condition of Stepney he contended that owing to the influx of poor alien immigrants the district was becoming worse instead of better, and he denied that the annual receipts of the practice were as stated to him. On behalf of the plaintiff it was contended that at the time when the statements were made they were perfectly true and that the alleged deterioration of Stepney as a locality for medical practice had not begun to take place in 1898 when the practice was sold. After the plaintiff and the defendant had given evidence it was announced by counsel that a settlement had been arrived at whereby Mr. Houchin made a substantial allowance to Mr. Marshall, and Mr. Marshall withdrew all imputations of fraudulent misrepresentation. The price paid for a medical practice is a matter with regard to which dispute may easily arise afterwards if every precaution is not taken by both parties at the time of purchase. The best way to avoid all difficulties is to rely solely upon carefully kept books in giving and in accepting information as to the value. The accounts of a medical practice are not complicated and do not require special skill to understand them if they are kept in a clear form. Opinions as to the future development of a district are opinions only, with regard to which a purchaser should seek such information as may enable him to test their accuracy for himself. It will be observed in the published reports of the case referred to that the judge and the jury both expressed their approval of the course adopted by the parties in arriving at an amicable settlement, clearly holding the view that the dispute was an unfortunate one, in which mistakes had been made involving no blame to either party.

An Action to recover Fees.

At the Liverpool Assizes, on July 29th, an action was heard in which Mr. J. D. Crawford of that city sought to recover a sum of £835 for medical attendance upon a deceased hotel-proprietor named Westmoreland and his wife. The executors of the deceased defended the action on the ground that the fees were excessive. Evidence was given that the deceased was a gentleman of considerable means, who left an estate of the value of £70,000 and who during his lifetime insisted upon very frequent medical attendance and advice. Medical practitioners other than the plaintiff gave evidence as to the reasonableness of the fees charged and the jury eventually found a verdict for the plaintiff for £699, for which judgment was accordingly entered. There can be no doubt that a medical practitioner is placed in a position of some difficulty by those patients who desire to see him more often than is strictly necessary in the interests of their health and who would at once transfer themselves to some other medical man should the first show any disinclination to humour a whim which they are ready and able to pay for. At the same time, an executor confronted with an account for medical attendance of more than £800 may quite reasonably examine it very carefully having regard to the responsibility of his position. On the other hand, in the course of the case referred to it was shown that Mr. Crawford had been paid without question £1030 for attendance upon Mrs. Westmoreland. The accounts in both instances are large and give rise to the question whether it is not more prudent to endeavour to obtain periodical payment than to risk having to bring an action for amounts so considerable. To prove attendances represented by £1000 to the satisfaction of a judge and a jury is in itself a matter which may not be easy.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT SWANSEA.

THE seventy-first annual meeting of the British Medical Association, which has now come to an end, was quite successful. The attendance of medical men was not so large as usual, partly, perhaps, on account of the remoteness of the place of meeting from any well-known seat of learning. This meeting was a jubilee visit to Swansea as the Association met there in 1853, a fact which had escaped our attention.

First impressions of Swansea were not lively, but the courtesy and kindness of everyone brightened those impressions. Those members of the Association who arrived at Swansea on July 27th approached the town through a thick murky canopy of smoke rendered especially disagreeable by heavy rain. Despite the elements, however, the streets were encumbered with a multitude assembled to do honour to their countryman, the Welsh Volunteer who had gained the King's Prize at Bisley and was returning to Swansea on that day. Visitors to Swansea had been warned not to expect anything beautiful in the place and the narrow monotonous streets in which no trace of architectural ambition appears looked their worst in the downpour.

Each member of the Association was presented by the Mayor and corporation of Swansea with a souvenir of the meeting in the form of an official album issued under the combined auspices of the corporations of Swansea and Abervavon, the Swansea Harbour Trust and the Chamber of Commerce. The book illustrates the furnaces, the docks, and the shipping of the place as well as some of the many charming spots in its neighbourhood. The publisher of the souvenir hopes that it may "form a factor in the material advancement and prosperity of Swansea" and we indorse the hope. Swansea cordially welcomed its medical visitors and they cannot fail to have carried away a kindly recollection of the town as well as a pleasant memory of the beauties of the environment.

In the annual report of the Association it is stated that the council has authorised the general secretary, when sending out the notices for the annual subscriptions, to intimate that he will also receive donations on behalf of the British Medical Benevolent Fund and the Royal Medical Benevolent College. It is gratifying to learn that these excellent charities have received as a result about £600 up to the end of March. It is quite easy to understand that the innovation may become a very useful one, seeing that members when writing their cheques for their annual subscriptions can without additional labour add their further donations on the same cheque.

The annual dinner of the British Medical Association at the meeting at Swansea was held on July 30th at the Albert Hall, Swansea, with the President of the Association, Dr. T. D. Griffiths, in the chair. Among those present were the Mayor of Swansea, Mr. Griffith Thomas, Mr. Andrew Clark, chairman of the council of the Association, Mr. D. A. Thomas, K.C., M.P., Dr. G. B. Ferguson, Surgeon-General G. J. H. Evatt, R.A.M.C., Sir A. Morris, Mr. H. E. Juler, Professor D. J. Hamilton, Sir J. Tyler, Mr. W. Whitehead, Dr. W. Collier, Dr. F. T. Roberts, Mr. A. W. Mayo Robson, Professor J. G. Adami, Professor H. Senator, Professor T. Glück, Mr. W. Arbuthnot Lane, Dr. Dawson Williams, Dr. S. Woodcock, and Inspector-General H. C. Woods, R.N. After the usual loyal toasts had been duly honoured Dr. Collier proposed, and Inspector-General Woods responded to, the toast of "The Navy, Army, and Reserve Forces." Mr. Thomas then proposed the toast of "The British Medical Association," which was acknowledged by Mr. Andrew Clark who took the opportunity of thanking the people of Swansea for the hospitable way in which they had entertained the members of the Association. Dr. Woodcock, in a witty and well-delivered speech, gave the toast of "The Swansea Corporation and Harbour Trust," which was replied to by the Mayor of Swansea. Dr. Roberts submitted the toast of "The President" and after this had been suitably replied to Mr. H. T. Thompson proposed the toast of "Our Guests and Friends from over the Seas." The hour being very late Professor Senator and Professor Adami briefly responded. In the course of the evening Dr. Arthur G. Haydon rendered two violin solos which met with an enthusiastic reception.

The council of the British Medical Association, at a meeting held on July 29th, resolved that a committee should be appointed to consider whether the general or the individual medical defence of its members shall be undertaken by the British Medical Association. If the committee report in favour of the Association undertaking medical defence of its members a scheme will be attached to the report according to which, in the opinion of the committee, the Association could safely and efficiently execute the work of medical defence. This is a very important question for the British Medical Association and one upon which a definite opinion should soon be arrived at, seeing how long proposals for the undertaking by the Association of defence work have been in the air.

The members of the Continental Anglo-American Medical Society lunched together at the Hôtel Métropole on July 30th in Swansea. The chairman was Dr. A. J. Freeman (San Remo). Mr. Edmund Owen gave the toast of "The Society" which was suitably acknowledged by Dr. F. M. Sandwith (Cairo). The health of the guests was submitted by Dr. Michael Foster, which was replied to by Dr. Frederick Roberts. Among those present besides the speakers named were Dr. Griffiths, Mr. Whitehead, Mr. Arbuthnot Lane, Sir Patrick Manson, Mr. F. Burghard, Professor Senator (Berlin), Professor Adami (Montreal), Dr. R. Ledermann (Berlin), Dr. Dawson Williams, Dr. L. N. Robinson (Paris), Dr. D. W. Samways (Mentone), Dr. H. D. Rolleston, Dr. Ward Cousins, Dr. I. H. Cameron (Toronto), Dr. H. E. L. Canney (Assouan), and Mr. C. D. Marshall. The proceedings were not continued so long as usual because the Address in Surgery by Mr. Mayo Robson was delivered in the afternoon on the day on which this luncheon was held, but the function was nevertheless a complete success and those present looked forward to meeting again in Paris in October, 1904, at the International Congress on Tuberculosis.

THE SECTIONS.

MEDICINE.

THURSDAY, JULY 30TH.

Dr. H. D. ROLLESTON (London) introduced a discussion on

The Treatment of Gastric Ulcer.

Gastric ulcer had formed the subject of discussion before this section in 1900 when Dr. J. F. Payne opened the proceedings by a paper on the Problems of Gastric Ulcer which included the more restricted subject of its medical treatment chosen for consideration that day. In the following year Mr. H. G. Barling in the surgical section dealt fully with the treatment of gastric ulcer by gastro-jejunostomy. On the present occasion they were mainly concerned with the medical treatment of gastric ulcer. In the acute stage of an ordinary clinical case of gastric ulcer in a young woman, with localised tenderness, vomiting,

and pain, the principle of absolute physiological rest, though universally accepted, was not so consistently carried out. While most medical men cut off all food by the mouth some allowed water, sips of water (hot or cold), or ice by the mouth to relieve thirst. Probably this depended in part on the erroneous belief that water was quietly absorbed by the mucous membrane of the stomach. As a matter of fact, water taken into the stomach was only absorbed in the intestine and had first to be expelled from the stomach by peristaltic action. In this way not only was healing delayed but a gastric ulcer might be so disturbed that severe hæmorrhage was induced. Dr. Rolleston had seen hæmatemesis set up when water was first allowed by the mouth five days after a previous hæmatemesis and when deep tenderness had disappeared. The better practice was to forbid any water by the mouth and to rely on rectal injections of from 10 to 20 ounces of water given slowly four or more times a day. The mouth should be kept as clean as possible by water or a mouth wash, such as Listerine. Reference was made to the occasional occurrence of parotitis as a complication in rectally fed patients. Mr. B. N. Tebbs had found from an analysis of the cases at St. George's Hospital that parotitis was more frequently a sequel of gastric ulcer than of other abdominal diseases, such as appendicitis, that the patients attacked were all on nutrient enemata, and that the routine use of antiseptic mouth washes did not protect against the incidence of parotitis. The latter point was of interest as it militated against the view that there was an ascending infection of Stensen's ducts from the mouth. The proteids of nutrient enemata should, of course, always be peptonised and the enemata should contain eggs and a sufficiency of salt, in addition to the ordinary constituents such as milk, beef-tea, and sugar, and might be given every four or six hours. The irritability of the rectum should be guarded against by washing out the bowel daily. It was, however, a question of considerable interest whether nutrient enemata were necessary during the period—usually from one to two weeks—in which no food was given by the mouth. It was somewhat surprising how well patients bore complete starvation when plenty of water was given by the bowel, and it had been epigrammatically said that nutrient enemata satisfied the minds rather than the bodies of the patients. As a result of careful chemical analyses of enemata, urine, and fæces in cases on exclusive rectal feeding Edsall and Miller[1] had concluded that in exceptional cases rectal feeding provided enough food to prevent tissue loss, but even then only maintained the patient in a condition of decided subnutrition. More efficient nutrient enemata could be given in a semi-solid form as advised by Leube, and Grünbaum[2] had advocated ox serum in rectal alimentation in combination with starch and glucose as a satisfactory method of supplying the necessary amount of caloric energy to the body and of minimising loss of weight. Attempts to bring about a cure and to prevent a relapse might be directed (1) to improving the general health and removing any underlying cause, such as chlorosis, syphilis, or oral sepsis; or (2) to the purely local treatment of the ulcer. In the mild cases commonly recognised as gastric ulcer in young women there was no doubt that as soon as gastric irritation had subsided iron was a most valuable remedy and should be taken to prevent a relapse in the same manner as in chlorosis. In the more chronic gastric ulcers usually seen in men after 30 years of age iodide of potassium should be tried, as a certain percentage of these ulcers were syphilitic in origin. Cautiously washing out the stomach with water or mild antiseptic solutions or running in a large amount of bismuth so as to get the local soothing effect of bismuth on the surface of the ulcer were curative measures sometimes employed. "Erosion" of the gastric mucous membrane had been treated by an intragastric spray of nitrate of silver (1 or 2 per cent).[3] In considering the medical treatment of gastric ulcer Dr. Rolleston said that the occurrence of vomiting indicated that absolute physiological rest should be given to the stomach and that nothing except drugs like opium, bismuth, and hydrocyanic acid should be given by the mouth. In some instances it appeared that the vomiting was reflex, due to the irritation of rectal injections, because it ceased on cautiously administering liquid food by the mouth and omitting rectal feeding. In a few cases the cause was probably oral sepsis and the swallowing of pus and micro-organisms, as shown by the fact that removal of bad teeth cured this symptom in two instances and improvement followed attention to the teeth in others. It was suggested that in some cases vomiting depended on the administration of common salt, which was given with eggs to increase absorption of the nutrient enemata. It was impossible and indeed unnecessary to enter fully into the treatment of hæmatemesis. Absolute rest, assisted by morphia hypodermically to quiet anxiety, was essential. Patients should not be allowed to suck ice. When hæmatemesis recurred or there were signs of continued though concealed hæmorrhage the administration of Ruspini's styptic or of adrenalin by the mouth for their purely local action on the bleeding spot and a rectal injection of a drachm of chloride of calcium, in order to increase the coagulability of the blood, might be given with advantage. Turning to the indications for surgical treatment, apart from perforation the only acute complication which required operative interference was repeated hæmorrhages which did not yield to medical treatment and were manifestly endangering life. Repeated hæmorrhages might be due (1) to an ordinary gastric ulcer with an exposed and ulcerated artery in its floor, or (2) to "exulceratio simplex" of M. Dieulafoy, or "pore-like erosions" of the gastric arterioles of Dr. J. Lindsay Steven. In chronic gastric ulcer operative interference was justified in the following circumstances: (1) When there was constant pain which was not relieved by medical measures and leading to a condition of chronic invalidism. This might be due to adhesions or might depend on the presence of a large gastric ulcer. 2. When there was intermittent or permanent pyloric obstruction. The first might be due to spasm set up by a chronic ulcer near the pylorus and was met by gastro-enterostomy; the second was due to cicatricial contraction. 3. When hæmatemesis recurred in spite of medical treatment.

Dr. T. D. GRIFFITHS (Swansea) remarked that mechanical and physiological rest of the stomach was the principal object of treatment and this was best carried out by rectal feeding. He emphasised the state of the mouth and tongue as a guide to the amount and kind of nutrient enemata. The bowel need not be washed out every day—every three or four days was sufficient. In early cases ten days of this treatment was sufficient and then the diet must be gradually increased as in the diet of infancy. From four to six ounces of predigested food might at first be given every four hours. Bodily rest was important—in most cases two or three weeks in bed were sufficient.

Dr. R. SAUNDBY (Birmingham) remarked that the diagnosis of this disease was incomplete. "Gastric ulcer" was a name applied to a group of symptoms which might or might not be attended by actual ulceration. The first principle in treatment was complete rest in bed. Physiological rest of the stomach was of equal importance. Sulphates of iron and magnesia mixed were the best drugs. When hæmatemesis was present feeding by the rectum must be adopted for a limited time. Symptoms must be relieved as they arose. Occasionally teaspoonful doses of olive oil relieved the pain, and morphia might be required. Death was very rare when the patient came under treatment before perforation had occurred. An ice-bag over the epigastrium was useful. He agreed with Dr. Rolleston that pyloric obstruction (spasm) and recurrent hæmatemesis were indications for operation, but constant pain as an indication must be considered in relation to the condition of the patient's nervous system.

Dr. W. J. TYSON (Folkestone) thought that every case of anæmia in young women should be regarded as a possible case of gastric ulcer. If this were done and such cases were kept under observation more completely much good would ensue.

Dr. H. W. KING (Chester) dwelt on the necessity of prolonging treatment long enough for the ulcer to heal. He did not agree with washing out the bowel every day. He never advised operation.

Dr. W. COLLIER (Oxford) had had to deal with about 180 cases of gastric ulcer, cases being so diagnosed in which hæmatemesis had occurred. He agreed with the principles of treatment mentioned by Dr. Rolleston and Dr. Saundby. Many anæmic patients complained of epigastric pain and they were too numerous to take into hospital, as suggested by a previous speaker. As to drugs, bismuth and iron were his favourite remedies.

[1] Edsall and Miller, Transactions of the College of Physicians, Philadelphia, 1902, vol. xxiv, p. 225.

[2] Grünbaum: Brit. Med. Jour., vol. i., 1901.

[3] Max Einhorn: The Journal of the American Medical Association, May 20th, 1899.

Dr. F. D. BOYD (Edinburgh) thought that the treatment of gastric ulcer was passing into the hands of the surgeon. As to feeding by the rectum, it was only possible for a patient to obtain 210 calories in this way, whereas a normal adult required 2000. There was always anæmia and citrate of iron could be given hypodermically. As regards operation, most of the cases of hæmatemesis which he had seen sent into hospital for operation had got well without operation.

Dr. A. MCPHEDRAN (Toronto) referred to two cases in which operation had not led to the discovery of any ulceration, the stomach, however, not having been opened. Hæmorrhage might occur very easily from the stomach. He had produced it by washing out the organ. Reference was made to two cases in which adhesions had produced all the symptoms of gastric ulcer. Some cases of gastric ulcer persisted in spite of all treatment for several years.

Dr. BERTRAND DAWSON (London) remarked that the discrepancies in the results of treatment in different hands were largely explained by divergent views on diagnosis. There were milder cases which some physicians would and others would not put into the category of gastric ulcer. This explained the apparently different results obtained by different observers. That cases presenting even marked evidences of gastric ulcer (marked pain related to food, tenderness, vomiting, and even repeated hæmatemesis) occurred without any ulcer being in reality present had been abundantly proved. In mild cases careful feeding by the mouth was desirable from the first, but in severe ones it should be exclusively by the rectum for a week. In the treatment of severe hæmatemesis complete withholding of food by the mouth, hypodermic injections of morphia, and rectal injections of chloride of calcium were advisable. The chloride of calcium should be given in one- or even two-drachm doses twice daily for three days with the object of increasing the coagulability of the blood. The objection to adrenalin and ergot was that whereas in bleeding from capillaries and veins they would be useful, they would be the reverse in focal bleeding from an arteriole, and there were often no certain means of determining this question. Emergency operations at the time of the bleeding were to be deprecated; the patient's condition was unfavourable and the bleeding point was often very difficult to find. On the other hand, cases of hæmatemesis usually yielded to medical treatment; their mortality was very low and it was extraordinary how near death such a patient could be and yet recover.

Dr. W. EWART (London) referred to the importance of rectal feeding in cases of gastric ulcer and demonstrated an instrument for the continuous administration of nutrient enemata. Two pints might be administered in this way, the proportion being one pint of milk, two eggs, and from two to four drachms of maltine.

Dr. G. PARKER (Clifton) referred to the importance of giving plenty of water by the rectum.

Dr. ROLLESTON, in replying, remarked that most cases of gastric ulcer revealed hyperacidity of the gastric contents but in other cases it was absent. His opinion as to adrenalin and ergotin coincided with that of Dr. Dawson. Operation was more or less a desperate measure.

Dr. E. LLOYD JONES (Cambridge) read a paper on

The Physical Examination of the Upper Regions of the Chest.

He first referred to the insufficient information on the subject in medical literature. On inspection, in adults the right clavicle tilted more than the left in right-handed persons, and the contrary in left-handed persons. In children and ambidexters they sloped equally. Exceptions often afforded a clue to disease. On palpation the vocal vibrations were usually more marked on the right side. On percussion the right apex was usually duller in right-handed persons, as shown by Brasil and later by Sir H. R. Beevor. The heights of the apices could not be accurately determined; and though there was a marked increase of apical resonance during deep inspiration there was no real expansion of the apex. On auscultation the breath sounds were harsher and louder at the right apex. In quiet breathing there was some "inaudible expiration" at the left apex. If present only at the right apex there was a presumption of disease. Bronchial breathing was common below and over the right clavicle as well as in the usually described situations. Lastly, the vocal resonance was greatest at the right apex and exceptions pointed to disease. Dr. Lloyd Jones referred to the danger of these physiological differences being regarded sometimes as signs of disease and he gave one or two instances where such mistakes had been made.

Dr. JOHN HADDON (Denholm) read a paper entitled

Facts as to Food and Fasting in the Treatment of Disease.

Having been obliged to study diet in his own case he had learnt the importance of the subject. He mentioned a number of facts as to the effects of food (1) in health and (2) in disease. He attributed excessive perspiration and fatigue from exercise to the system being unduly charged with waste products and he maintained that all diseased states were more or less attributable directly or indirectly to wrong feeding. He mentioned some cases of fasting in diseased states in which the effects were, he said, simply miraculous. The necessity of a chair of dietetics being established in every medical school was referred to.

SURGERY.

THURSDAY, JULY 30TH.

Mr. JORDAN LLOYD (Birmingham), the Vice-President, took the chair.

A discussion took place on

The Treatment of Advanced Tuberculous Disease of the Knee-joint.

By "advanced" is implied the stage where operative interference of some kind is imperative. The discussion was opened by Mr. G. A. WRIGHT (Manchester), whose paper had been prepared in conjunction with Mr. W. F. HASLAM (Manchester), and was founded on the replies received to a paper of questions sent out to about 200 hospital surgeons in all parts of the country. The most striking point about the 75 replies received was the remarkable divergence of the views held. In the opinion of the majority the indications for operation were progressive disease and suppuration. They considered that erasion was preferable in children and in a comparatively early stage of the disease, while in older subjects and in more advanced cases excision was needed. Partial operations seemed to be not in favour. In reply to the question as to the incision employed the majority expressed a preference for the ordinary horseshoe incision. They retain the patella in erasion and also, if possible, the crucial ligaments. Bone lesions met with were to be scooped out, whether superficial or deep, and many advised the application of antiseptics locally to the denuded bony surface. For the purpose of arresting hæmorrhage an elastic tourniquet was generally advised and most removed it before applying the dressing. As to the employment of drainage the views were fairly evenly divided. The back splint in one form or another was used by most, and this was relied on to prevent the tendency to flexion which it was generally agreed commonly existed. If flexion had occurred it was treated by forcible flexion if the union was fibrous, but if it was bony a wedge-shaped piece of bone needed to be removed. It was almost universally agreed that no attempt should be made to obtain a moveable joint. As to the amount of shortening resulting from erasion and excision the most divergent opinions were expressed. Many thought that erasion gave rise to no shortening, while others considered that from a quarter to half an inch of shortening was possible. As to excision, the differences were much greater. There was no uniformity in the replies to the question, "How far does the age of the patient influence you in deciding which operation to perform?" But on the whole a preference was expressed for erasion in children and for excision in adults. After excision some advised the use of pins, wire, or screws, but many employed no method of fixation. When excision was performed most of those who replied preferred to remove the patella; others fixed it to the front of the femur. The final question related to the origin of the disease. A large majority considered that most of the cases arose in the synovial membrane. Mr. Wright then proceeded to give his own opinion on these several points. He considered that if three months' careful treatment of a tuberculous knee was not followed by distinct improvement or if there was evidence of caseation some operative procedure should be undertaken. On the other hand, he thought that if the disease were very advanced neither erasion nor excision should be performed. In most cases he considered erasion the better operation, but he removed any diseased bone so that in some cases the operation closely resembled an excision. The incision he preferred was the transverse patellar incision with division of the bone, which was wired at the end of the operation. He endeavoured to retain

the crucial ligaments in cases where it was possible. Any patches of diseased bone he scooped out. He preferred to use an elastic tourniquet without the use of the Esmarch bandage and he removed it before applying any dressing. He never employed drainage unless the case was septic. A back splint he thought best and in order to prevent flexion after the operation he advised the use of a Thomas's knee-splint for two years. If flexion had occurred and the union was fibrous he employed gradual extension or forcible straightening, and if it was osseous he performed osteotomy with or without the removal of a wedge-shaped piece of bone. He seldom attempted to obtain a mobile joint after erasion but occasionally movement was possible. In erasion there was usually no shortening but it certainly did occur in some cases. In his opinion the great majority of cases of tuberculosis of the knee began in the synovial membrane. Mr. Wright first performed erasion in 1881 and he had employed it in a very large number of cases since and he was thoroughly satisfied with it in suitable cases.

Dr. WARD COUSINS (Portsmouth) expressed the opinion that tuberculosis of a joint commenced equally frequently in the synovial membrane and in the bone. When it commenced in the bone a fall might cause it to burst into the joint; in such cases the best treatment was to incise early and to drain the joint, placing the limb on a back splint and thus perfect recovery of the joint might ensue. Personally he had not had much experience of erasion, but he thought it was the best treatment for a tuberculous knee in a child. He had not found it necessary to amputate in more than 2 per cent. of all cases. He had performed excision on patients from the age of 14 to the age of 52 years. It was best to remove only a thin layer of the bone and any tuberculous patches in the bone could be scooped out and after the operation the limb was placed on a bracketed back splint.

Mr. C. R. B. KEETLEY (London) wished to emphasise the fact that tuberculous disease of the knee was by no means especially a disease of childhood. As to what operation should be performed he could only say that all the diseased tissue must be removed. The name "erasion" was a misnomer, for the diseased tissue had to be cut out, not scraped. He considered it very important to get rapid healing of the wound, for if this were done there was much less likelihood of recurrence. If any opening through the skin be left it was best to cover its walls with Thiersch grafts. Mr. Keetley related a case of tuberculous disease of the knee-joint in which a large cavity in the lower end of the femur would not heal until it was lined by Thiersch grafts.

Mr. K. W. MONSARRAT (Liverpool) mentioned that he had had ten cases of erasion; nine of them were now free from disease and one needed subsequent amputation. He considered that there was a great tendency to flexion if the ligamentum patellæ were divided in the operation and this was also liable to happen if the patella were divided transversely and sutured. He had found very useful a vertical section of the patella, for by the separation of the two halves it was easy to get at all parts of the joint. As to the question of the desirability of applying forcible movement to a joint which had been tuberculous Mr. Monsarrat considered the tuberculin test useful, for if it gave no reaction it would be safe to flex the joint forcibly. He thought that it was very rare for tuberculous disease of the knee to begin in bone.

Mr. A. H. TUBBY (London) pointed out that the chief cause of flexion was a physical one. The hamstring muscles acted directly in causing flexion, while the extensors could act only obliquely. The disease tended to weaken the extensors and every increase in the degree of flexion increased the power of the flexors in at least geometrical proportion. The surgeon should aim at obtaining ankylosis, which was usually fibrous, and it was better to leave the patella. The patella, the femur, and the tibia should be wired together. Should the extensors be weak the biceps might be sutured to the top of the patella and so act as an extensor.

Mr. SINCLAIR WHITE (Sheffield) was of opinion that all hospital cases came ultimately to excision and therefore he was in favour of early excision. He employed a curved skin incision below the patella and then divided the bone vertically. He considered that a case should be watched for two years at least after operation.

Mr. H. BETHAM ROBINSON (London) looked upon the treatment in adults as very important and in hospital practice he was inclined to think that amputation was probably the best treatment if caseous foci in the bones were present. As to the seat of origin of the disease, he thought that in children most cases were synovial in origin, but in adults the bone was primarily affected.

Mr. A. B. MITCHELL (Belfast) expressed the opinion that it was easy to apply a Thomas's splint badly and that faulty application of this splint was responsible for many of the cases of flexion after operation. It was always best to operate early and an earnest endeavour should be made to remove all the disease.

Dr. H. A. LATIMER (Swansea) doubted the permanence of the improvement caused by erasion, for much disease lay hidden and could not be removed by a gouge. He was inclined therefore to prefer excision to erasion.

Dr. G. B. FERGUSON (Cheltenham) had obtained good results after excision in adults; he attributed his success to the application of antiseptics to the interior of the joint and as he always wired the bones together he had never had flexion.

Mr. EDMUND OWEN (London) spoke strongly in favour of amputation in tuberculous disease of the knee-joint, for after erasion or excision a stiff knee must result, and a stiff knee was a very great hindrance in most occupations, for it was always in the way. In proof of this contention he related the history of a young curate who insisted on an amputation in place of excision and later achieved great social success and ecclesiastical preferment, which would have been impossible if he had had a stiff leg.

Mr. JORDAN LLOYD could not agree that a stiff knee was in itself a bad result and he considered a man's own leg even with the knee stiff was preferable to an artificial limb. As a rule, amongst the higher classes operation was not required and in children of all classes the results of operation were unsatisfactory. To obtain the best results absolute immobility was essential. In some cases in children flexion might occur even after osseous ankylosis and it was then due to unequal epiphyseal growth.

Mr. WRIGHT, in reply, said that probably not more than 10 per cent. of all the cases needed operation. Some of the speakers did not seem to recognise the difference between erasion and excision; the difference was great and a real excision always tended to interfere with the growth of the bone.

Mr. J. BASIL HALL (Bradford) read a paper on

A New Route for Posterior Gastro-jejunostomy.

Last year he published four cases of this operation in THE LANCET[1] and he had had eight cases since. The operation consisted in making an opening for the jejunum to reach the posterior surface of the stomach through the great omentum instead of through the transverse mesocolon. This might be called the supracolic route and the operation was certainly more easily and quickly performed. The gastrocolic omentum was an almost avascular membrane and therefore the risk of hæmorrhage was exceedingly slight. It was easier to bring the stomach out through the abdominal wound and therefore the stitching could be done quickly. A merely theoretical objection against the operation was that the jejunal loop might be compressed by the colon, but the loop lay well to the left and no case of obstruction had occurred. In one case it was necessary to reopen the abdomen for obstruction produced by an omental graft compressing the bowel. When the graft was removed the symptoms ceased. Vomiting did not occur after supracolic posterior gastro-enterostomy. Mr. Hall thought it well to give the jejunal loop half a turn to the right before attaching it to the stomach. The paper was accompanied by a table of the 12 cases operated on up to the present.

Mr. W. MCADAM ECCLES (London) read a paper on

A Danger of Gastro-enterostomy.

Mr. Eccles performed gastro-enterostomy on a man, aged 64 years, who had had symptoms of non-malignant pyloric obstruction for two years. There were numerous adhesions around the pylorus and it was found difficult to turn up the stomach because of the fixity of the pyloric end. Posterior gastro-enterostomy was performed and the patient did well till the eleventh day, when vomiting and hæmatemesis occurred and he died on the fourteenth day after a profuse hæmorrhage. At the necropsy purulent lymph was found on the upper surface of the liver and between the liver and stomach. The anastomosis was perfect. Immediately beyond the stenosed pylorus was a deep annular ulcer

[1] THE LANCET, Sept. 6th, 1902, p. 657.

eroding the whole thickness of the wall of the bowel and perforating the hepatic artery. It is probable that the manipulation necessitated by the delivery of the stomach for operation caused a fresh extension of the duodenal ulcer.

Mr. WHITE considered that the posterior operation caused unnecessary disturbance; he always employed anterior gastro-enterostomy, but he was careful to make the anastomosis not more than three-quarters of an inch from the gastro-colic omentum.

Mr. MITCHELL expressed his preference for posterior gastro-enterostomy and he considered it better that the jejunum should pass through the mesocolon than through the omentum. He wished to utter a protest against performing gastro-enterostomy indiscriminately for gastric ulcer. For all ordinary cases infolding the ulcer was quite sufficient to effect a cure; it acted probably by eliminating peristalsis.

Mr. KEETLEY thought that the supracolic route for gastro-enterostomy suggested by Mr. Hall had all the disadvantages of the anterior method and he considered that constipation with distension of the colon would give rise to obstruction by pressure on the jejunum.

Mr. T. H. OPENSHAW (London) was inclined to think the trans-omental operation the best method, it was so very much simpler. He agreed that gastro-jejunostomy was not necessary in all cases of gastric ulcer, for infolding or excision was quite sufficient.

Mr. HALL, in reply, said that in no case had the colon exerted obstructive pressure on the jejunum and therefore this objection was theoretical only.

OBSTETRICS AND GYNÆCOLOGY.

THURSDAY, JULY 30TH.

Professor MURDOCH CAMERON (Glasgow) read a paper on

The Diagnosis and Treatment of Uterine Fibroids.

He said that as regarded the association of sterility and fibroids he looked upon the latter as the cause rather than the result of sterility. In his own experience they were not more common in single than in married women. He drew attention to the fact observed by himself that fibroids in the fundus frequently caused a tumour having a "bullock's heart" shape. Some fibroids were soft and boggy, resembling an ovarian cyst. The submucous and interstitial forms gave rise to hæmorrhage. In the diagnosis he used the sound and when the latter was in the uterus and the tumour was moved the handle swayed from side to side. When causing no symptoms delay was advisable. If operation was required hysterectomy was the most satisfactory way of dealing with the case. Enucleation and oöphorectomy had been generally abandoned. The indications for operation were absolute, as pressure and hæmorrhage, and relative, as pain and discomfort giving rise to invalidism. In performing hysterectomy it was sometimes advisable to enucleate the tumour first so as to give room and in that case he would place an elastic ligature round the cervix during the enucleation.

Dr. HEYWOOD SMITH (London) thought that enucleation was sometimes very good treatment even when the tumour had a broad attachment, but they should follow the advice of Marion Sims and always complete the enucleation when once begun.

Dr. F. W. KIDD (Dublin) drew attention to the dangers of hæmorrhage and sepsis in cases of fibroid associated with parturition.

Dr. E. J. MACLEAN (Cardiff) had observed intermittent contractions in a fibroid tumour.

Dr. F. J. MCCANN (London) spoke of the removal of fibroid tumours for æsthetic reasons.

The PRESIDENT, Professor W. STEPHENSON (Aberdeen), said that they were not justified in operating in cases of fibroid unless there was a distinct warning of danger to life. He had watched cases where women had carried fibroid tumours for 30 and 40 years with little inconvenience. He thought that the soft fibroid might diminish after the menopause but not the hard variety.

Dr. JAMES OLIVER (London) read a paper entitled

A Clinical Study of Internal Hæmorrhage in Association with Ectopic Pregnancy.

He said that in the early days of a tubal pregnancy if there was hæmorrhage the bleeding was not from the vessels of that portion of the wall of the tube which was in contact with the ovum but from those of the tubal wall on either side of the ovum. Hæmorrhage in uterine gestation was rare before the sixth week, but in tubal gestation it might occur at any time after the ovum had become detached and the blood found its way along the tube either to the uterus or the peritoneum. Tait laid stress on a previous history pointing to tubal disease and Parry in the same way mentioned the occurrence of previous sterility. This view was held till lately, but his own experience was opposed to this and he urged that too much importance should not be attached to it or a mistake in diagnosis would be made. Pain was the first symptom, the patient having either missed a period or not; in a small number of cases there was no preceding amenorrhœa. Sometimes the appearance of vaginal hæmorrhage was the first symptom. The passage of a decidual membrane was not as common as authors stated. Occasionally troubles of micturition and retention of urine were present and the latter could not always be put down to pressure but must be of reflex origin. Rupture occurred between the sixth and twelfth week and the hæmorrhage into the peritoneum might soon stop, but was apt to recur and to prove fatal. The hæmatoma had a peculiar doughy sensation difficult to describe but very characteristic. When there was hæmorrhage into the broad ligament there might be a large tumour as the ligament was distensible and permitted considerable extravasation; in these cases the uterus was fixed somewhat and some annular constriction of the rectum could be felt, especially if the left broad ligament was affected.

Mr. A. HORNE (Dublin) agreed with Tait's view as to previous sterility.

Dr. KIDD raised the question of pyrexia in intraperitoneal hæmorrhage even when no sign of suppuration was present.

Dr. C. E. PURSLOW (Birmingham) mentioned the liability there was to confuse uterine abortion with ruptured tubal gestation and thought that when the former was supposed to be present owing to the occurrence of abdominal pain and vaginal hæmorrhage the severity of the pain and particularly the occurrence of faintness should raise a suspicion that the case was one of tubal gestation.

Dr. T. WATTS EDEN (London) said that one after another former explanations of tubal gestation had had to be given up. Careful pathological and microscopical examination had failed to discover any signs of previous salpingitis and the tube outside the site of attachment of the ovum had been proved to be absolutely healthy. It had been shown that the ovum in the tube actually penetrated the muscular walls of the latter. He would ask Dr. Oliver why he thought that the hæmorrhage did not come from the site of attachment. A decidual formation in the uterus had been proved to be present in every case but it was not always discharged. He did not think that the vaginal hæmorrhage came from the tube but from the uterine decidua. There was sometimes much difficulty in diagnosing these cases from cases of uterine abortion. He thought that cases of extreme bleeding proving rapidly fatal were rare.

Dr. T. B GRIMSDALE (Liverpool) had met with most cases in young newly married women and he thought that developmental peculiarities such as diverticula on the tubes were causes.

Dr. R. G MCKERRON (Aberdeen) agreed with Tait's view and thought that a history of previous sterility was important in the diagnosis.

Dr. J. A. C. KYNOCH (Dundee) believed that examination sometimes caused rupture of a gravid tube.

The PRESIDENT pointed out that the degree of collapse was not proportionate to the amount of hæmorrhage and that it was usually better to wait, carefully watching the pulse, which was the best guide. He attributed the pyrexia to the absorption of blood products.

Dr. OLIVER, in reply, thought that collapse in cases of pyosalpinx was due to leakage.

Dr. MACLEAN read a paper on

Two Successful Cases of Cæsarean Section for Contracted Pelvis in Dwarfs.

Conservative Cæsarean section was performed in each case and the patient was sterilised by removing an inch of each Fallopian tube. Both mothers and children recovered.

Dr. H. O. NICHOLSON (Edinburgh) read a paper entitled

Some Remarks on the Maternal Circulation in Pregnancy

which were enumerated as follows:—1. The hypertrophy of the heart which occurred during pregnancy was not always of a compensatory nature. 2. Signs of dilatation of the right

heart in pregnancy: (*a*) pulsation of the jugular veins; (*b*) systolic murmurs over the præcordia; (*c*) increase in cardiac dulness to the right; and (*d*) inconstancy of the arterial pulse in different positions of the body. 3. A possible explanation of the cardiac hypertrophy and dilatation in pregnancy—contraction of the arterial and arteriole systems. 4. The influences which regulated the arterial calibre: (*a*) the vaso-motor centre; and (*b*) the internal secretions of the suprarenal and thyroid glands. 5. The different types of circulatory phenomena observed during pregnancy might possibly be related to disturbances of the normal influence exerted on the vascular system by these internal secretions: (*a*) two opposite types of circulation occurring in pregnant women; and (*b*) some features of each type. 6. Pre-eclamptic symptoms and arterial constriction—value of thyroid extract and other vaso-dilators in controlling these symptoms.

STATE MEDICINE.

WEDNESDAY, JULY 29TH.

Dr. J. C. MCVAIL (Glasgow), the President of the section, opened a discussion on

The Vaccination Acts and the Prevention of Small-pox.

He said that as the Government had determined to introduce during the present session no fresh legislation on the question of vaccination they were still in the position of discussing not what the law was but what it ought to be. The value of vaccination as a preventive of small-pox was not for them a matter of opinion; it was a matter of knowledge. There was no reason whatever to suppose that small-pox could be stamped out of Britain without vaccination and revaccination. The work of persuading people to accept protection should always be done with discretion and advice should not be pushed too far. If after reasonable persuasion a "contact" would not accept vaccination his subsequent attack by small-pox might have quite an admirable effect in bringing about the vaccinal protection of a whole village. The prevalence of small-pox in the provinces emphasised the importance of obtaining by Act of Parliament special powers for meeting special difficulties. When small-pox threatened the Local Government Board should have special powers to issue epidemic regulations such as they now possessed with regard to threatened outbreaks of cholera or plague. In these regulations the prevention of the spread of small-pox by tramps should be dealt with, for the opportunities which vagrants had of carrying the disease from village to village and from town to town rendered them a most serious danger to the nation. The compulsory vaccination or re-vaccination of "contacts," though at first this course might appear desirable, he did not advocate, but proposed that all tramps within a defined area should be examined and if necessary vaccinated, while in certain instances "contacts" should be detained for a specified period. Ample powers should be given not only for the inspection of premises where tramps or navvies resort but also for the examination of the inmates. There was practically unanimity of opinion regarding the necessity for a thorough and proper performance of the vaccinal operation, and it was also conceded that calf lymph should either be provided by the Government or if produced by private makers these should work under Government supervision or certificate. The authorities to administer the Vaccination Acts should be, in his opinion, the county councils or sanitary authorities exercising powers over extended areas; but whatever authorities had charge of the Acts they should be relieved of all responsibility as to the prosecution of defaulters. In every case there should be a public prosecutor directly under the Local Government Board instead of as at present a vaccination officer appointed by the guardians but requiring to act independently of them. The vaccination officer's relation to the matter should consist in handing to the public prosecutor, who would no doubt be a local lawyer, periodical lists of defaulters who had neither submitted to vaccination nor obtained an exemption certificate. It would be for the central authority, in consultation with their local prosecutor, to determine what cases should be taken to court and what cases should be passed by. The primary purpose of the Vaccination Acts was not to punish anti-vaccinationists but to promote vaccination, and punishment of anti-vaccinationists was wise only in so far as it promoted vaccination. By means of consultation between the local prosecutor and the Local Government Board prosecutions might often be avoided where their effect would be not to advance but to hinder vaccination.

Mr. T. W. H. GARSTANG (Altrincham) said that the question as to whether every medical practitioner should be paid by the State or whether the present system should be continued was only a matter of detail which might very well be decided when a new Vaccination Bill was introduced. He proposed the following motion:—

That this meeting of the State Medicine Section of the British Medical Association begs to press on the council the importance of fully using the machinery of the Association for bringing before Members of Parliament throughout the country by means of local deputations and representations the necessity for further legislation for the promotion of vaccination and revaccination.

The motion was seconded by Mr. HERBERT JONES (Hereford).

Dr. A. E. MOLE (Gower) thought it was most unreasonable that a public vaccinator should be sent to vaccinate "contacts" who might be the patients of another medical man. Lymph should be supplied to all private practitioners who should be paid a fee for all successful vaccinations.

Mr. GARRETT HORDER (Cardiff) considered that the administration of the Vaccination Acts should be in the hands of the sanitary authority and hoped that the new education authority would have school children periodically inspected with a view to discovering those who were unprotected by vaccination and if the Government were not prepared at present to make revaccination compulsory the education authority might urge children to be revaccinated before leaving school. He had long been of opinion that public vaccinators should be officials who devoted their whole time to the work of vaccinating.

Mr. J. M. MACKENZIE (Kirkby-in-Ashfield) doubted the wisdom of whole-time appointments; he did not altogether approve of a medical officer of health being debarred from private practice. He did not think that the private practitioner had any grievance against the public vaccinator who offered vaccination to children outside his own practice, for these children were practically the children of the State.

Mr. W. JONES MORRIS (Portmadoc) protested against a statement which had been made that public vaccinators were kept in office by doles.

Mr. J. RANKIN (Kilmarnock) urged systematic and not spasmodic vaccination. The operation should be performed during infancy, then at seven years of age, and again at the age of 14 years.

Dr. JOSEPH GROVES (Isle of Wight) said that if all practitioners were paid by the State for vaccinating there would be a difficulty in connexion with inspection. The Local Government Board would have to increase its staff of inspectors very considerably if inspection were properly carried out.

Mr. EBENEZER DAVIES (Swansea) urged revaccination before the wage-earning age, maintaining that a workman preferred the remoteness of small-pox to the immediate certainty of incapacity for a few days. He said that during the recent outbreak of small-pox in Swansea there were 14,000 persons revaccinated and not one contracted the disease. Before the epidemic the vaccination returns showed that 10 per cent. of the children born in the town were unaccounted for, but since the epidemic all but 4 per cent. were accounted for.

Dr. J. BRASSEY BRIERLEY (Old Trafford) disapproved of whole-time public vaccinators and considered that those who had brought discredit on vaccination were those practitioners who only made one mark.

Dr. J. M. MORRIS (Neath) advocated an annual inspection of the inmates of common lodging-houses for the purpose of securing the revaccination of tramps who, he maintained, were the chief cause of the spread of small-pox.

Dr. C. R. DRYSDALE (London) said that they were all convinced that vaccination prevented small-pox but not for life. They ought, therefore, to take a firm stand and say that children should be revaccinated at the age of 12 years. He proposed the following motion which was seconded by Mr. H. H. TIDSWELL (Swansea):—

Considering that of late years there have occurred in cities of the United Kingdom several epidemics of small-pox, whilst in Germany since the year 1875 such epidemics have been unheard of on account of the fact that all children under two years old are under a law of compulsory primary vaccination and all the population under a law of compulsory revaccination and that all vaccinations are performed with animal vaccine, this meeting is of opinion that all children in the United Kingdom should be vaccinated in infancy and revaccinated at the age of ten or 12 years and that animal vaccine alone should be

made use of. If this plan were thoroughly carried out this meeting is of opinion that epidemics of small pox would no longer occur in this kingdom.

The PRESIDENT in summing up the discussion said that the question of vaccination and revaccination was much less a question for the medical practitioner than it was for the public. The question of the supply of lymph to private practitioners was bound up with that of revaccination and until revaccination was compulsory or was more general the Government could not undertake the supply of lymph in large quantities intermittently. The lymph had to be stored for a month and a Government could not be expected to keep up a supply equal to the maximum amount that might be required, for ordinarily the greater portion would have to be destroyed. The only way to get a sufficient supply of lymph was by a steady system of revaccination; then as there would not be any epidemics abnormal supplies would not be required. Both the motions were carried in a meeting of about 50 members.

Dr. J. WARD COUSINS (Portsmouth) opened a discussion on

The Midwives Act, 1902.

He said that it was difficult to understand why their country should have been so long behind other European nations in seeking legislation for protecting the lives of women of the humbler classes who were unable to obtain skilled help in the hour of danger. The Midwives Act of 1902 would steadily wipe out the ignorance and incapacity of the past. He thought that the provision for carrying out the Act by the aid of local bodies was a very helpful and practical method, for they were well able to do the work and to look after their own interests, and the success of the Act would greatly depend upon the work done by the local supervising authorities. As the Act principally involved the interests of women it appeared very desirable that there should be upon the authority at least two women who were recognised workers in, and conversant with the needs of, the district, and in all instances the local supervising authority should include the county medical officer of health and one or more medical practitioners. It would probably generally be the duty of the medical officer of health to act as executive officer to the local authority. The supervision would include inspection of the midwife's case-book, of the bag of appliances, and of her place of residence. He deplored the fact that at present the number of stillbirths in any area was unknown, but as the record of the midwife would show the number of cases which she had attended it was probable that the successful working of the Act and the records of the local authority might turn out to be the thin end of the wedge in securing registration of that class of birth. The educated midwives would help their patients to put their houses in order and to carry out sanitary precautions for their own protection. In teaching personal cleanliness and the value of cleanliness at home they would surround their patients with sanitary precautions. The work of midwives in promoting reform in the houses of the poor should have a wide and wholesome influence. They would be brought face to face with the question of how best to deal with overcrowding and with insanitary areas. Indirectly, the silent work of educated midwives should prove a wholesome stimulus to the higher classes of society and should arouse their sympathy in the great work of improving the dwelling houses of the labouring classes of our country.

Dr. GROVES, Mr. C. R. STRATON (Salisbury), and Dr. F. J. H. COUTTS (Blackpool) continued the discussion.

THURSDAY, JULY 30TH.

Mr. MACKENZIE (Kirkby-in-Ashfield) initiated a discussion upon

The Relation of Vaccination to Infant Mortality and Acute Concurrent Infantile Diseases.

After giving statistics covering the four years since the passing of the last Vaccination Act in 1898, comparing the death-rate among the vaccinated with that among the unvaccinated from the ages of two to 12 years, he gave notes of a large number of cases in which the vaccinal process ran concurrently with acute diseases. The conclusion which he came to was that there was no evidence for the assumption that vaccination influenced infant mortality adversely and that in the large majority of cases acute diseases were modified and toned down by vaccination.

Dr. DRYSDALE pointed out that in considering statistics such as those under consideration the social circumstances of the parents should be taken into consideration.

The PRESIDENT considered it very satisfactory that a public vaccinator should be taking such a scientific interest in his work and thought that public vaccinators generally might do a great deal in the way of accumulating information which would be of inestimable value.

The Spread of Enteric Fever and other Forms of Illness by Sewage-polluted Shell-fish.

Papers on this subject were contributed by Dr. ARTHUR NEWSHOLME (Brighton) and Dr. J. T. C. NASH (Southend-on Sea). Dr. Newsholme endeavoured to show that the steady stream of sporadic cases of typhoid fever which had occurred in Brighton in recent years was due to sewage-polluted shell-fish and he based his conclusions upon (1) clinical evidence, (2) the exclusion of other known causes, (3) topographical evidence, and (4) bacteriological and chemical evidence. He pointed out that cases of enteric fever due to contaminated water or milk nearly always occurred in groups while those due to oysters and other molluscs were apart from certain exceptional outbreaks generally sporadic. When discussing the possibility of defective house-drains being the cause of a case of enteric fever he expressed the opinion that this cause could be relegated more and more into obscurity, for given on the one hand bad drains and on the other hand the fact that the only person suffering in a given house from enteric fever had partaken of oysters known to have been subject to pollution by sewage they were bound to decide that in all probability the latter were responsible for the attack of enteric fever. The bacteriological and chemical evidence he considered as least important and he would brush aside as valueless a certificate to the effect that the bacillus coli communis was not found in a given oyster in the face of clinical and topographical evidence that oysters from a given source were responsible for cases of enteric fever. He next discussed the insufficiency of the powers with which local authorities were at present endowed to prevent a serious amount of disease caused by the consumption of contaminated shell-fish. He showed that Sections 116 to 119 of the Public Health Act, 1875, which enabled the medical officer of health or the nuisance inspector to seize articles of food which were diseased, unsound, unwholesome, or unfit for the food of man, were of no assistance at all in preventing the sale of shell-fish which presented absolutely no naked-eye evidence of unwholesomeness although they might be capable of causing fatal illness. In some detail were given the unsuccessful efforts of the Brighton corporation, first of all in the promotion of a Bill to regulate the sale of these molluscs and more recently by the adoption of a by-law which the Local Government Board considered was *ultra vires* owing to the "stringent provisions" of Sections 116 to 119 of the Public Health Act, 1875.

Dr. NASH appeared to attach more importance to bacterial evidence of pollution than was conceded by Dr. Newsholme and suggested that it should be illegal to expose shell-fish for sale unless they were from layings which were either entirely above suspicion or which were a considerable distance from any obvious source of pollution and in such a position as to be covered with sea-water at all states of the tide. In Southend the cockle vendors boiled the cockles for at least four and a half minutes in pure water and since this precaution had been observed the type of enteric fever following the ingestion of this shell-fish had been noticeably milder than when raw fish were eaten. He pointed out a possible danger from the discharge of effluents from sewage purification works, for though a considerable degree of chemical purification might be achieved bacterially the effluent was practically as impure as the crude sewage and they could not expect contact beds to keep back typhoid bacilli.

Major R. H. FIRTH, R.A.M.C., said that they could not get away from the fact that a mass of epidemiological evidence was accumulating that pointed to the genesis of a class of continued fevers which apparently were due to fæcal influences and yet did not conform clinically to classical enteric fever. The idea suggested itself whether as the result of attention to sanitary details a section of the population was not gradually coming into being which was more susceptible to infection by certain sewage bacteria other than the bacillus typhosus and as a result was presenting an increasing number of cases of continued fever of an anomalous type as compared with former years. The answer to this question could only be obtained by a prolonged series of clinical and bacteriological studies and a vast field of research was open in this connexion. But whatever might

be the precise final verdict upon these cases he thought that there could be little doubt that fæcal pollution was the root of the evil. Therefore in this sense he was disposed to doubt whether they need worry themselves at present as to what particular micro-organism might be the causative agent of disease resulting from the consumption of dirty molluscs.

Dr. COUTTS thought that social circumstances were an important factor in the question of typhoid infection from shell-fish. He did not agree with Dr. Nash's views as to an increased danger from the bacterial treatment of sewage. He was also of opinion that the cleansing of shell-fish in clean sea-water for three days did not render them innocuous.

Mr. DAVIES urged the importance of including in the investigation of the question the incidence of typhoid fever in the place from which they were imported. In the Gower Peninsula, which included both oyster and cockle districts, the death-rate from this disease was exceptionally low.

Mr. A. LLOYD JONES (Oystermouth) said that in his district the oysters had nothing whatever to do with spreading disease, though the poorer people during the winter months lived very largely on a soup made from oysters.

After some remarks from Dr. MOLE, Dr. DRYSDALE, Mr. MACKENZIE, and Mr. MORRIS,

The PRESIDENT said that the manner in which typhoid fever occurred in rural districts might lead one to suppose that there was a change in the type of the specific organism.

In the end the following motion was carried on the proposition of Dr. COUTTS, seconded by Dr. MOLE:—

That all layings from which shell-fish are taken for market should be subject to periodical inspection and should be registered if satisfactory, and that shell-fish should not be sent to market from any but such registered layings under the supervision of a board free from local influence.

PATHOLOGY.

WEDNESDAY, JULY 29TH.

President's Address.

In delivering the opening address in the Pathological Section the President (Professor D. J. HAMILTON of Aberdeen) replied to criticisms which had been passed on a paper written by him in connexion with Mr. J. H. Young of Aberdeen and published in 1903 in the Aberdeen Highland and Agricultural Society's Transactions. The experiments had been made to test the truth of Koch and Schütz's statement that human tubercle could not be successfully inoculated on bovines. One criticism was that the cases were too few in number. Koch and Schütz used 19 cases and the same number were used by Professor Hamilton and Mr. Young, 20 calves having been taken and one having died before inoculation. Of their 19 cases Professor Hamilton and Mr. Young had one die from septicæmia, one from enteritis, and two from some unascertained cause. The naked-eye appearances as well as microscopical sections in 15 out of 19 cases and subsequent successful reinoculation were additional proof. Another objection was that all the animals had not been previously tested with tuberculin. The reason for omitting this was that tuberculin injected thus beforehand might have conferred immunity, while six calves were so young (the youngest two weeks and the oldest eight weeks) and most unlikely to have become infected already. All the other cases were inoculated with tuberculin. Other critics reminded Professor Hamilton that the glands were naturally larger in the calf or considered that sufficient care had not been taken to furnish detail. As a matter of fact, he had taken very great care and his examinations were extensive. These critics, he thought, required an absurdly great amount of work. Finally, he considered the possibility that local disease might be of bovine, and the more generally distributed of human, tuberculosis. The weight of evidence, he thought, favoured the view that the bacilli in bovines and in man were alike rather than that the calf was susceptible to two varieties, the apparent differences depending on environment. The opposite view—namely, that bovine tuberculosis was transmissible to man—could not be proved by experiment and must remain a matter for conjecture.

After the address Dr. NATHAN RAW (Liverpool) made some remarks congratulating Professor Hamilton on the convincing nature of his experiments in showing that human tuberculosis could be conveyed to cattle and he then expressed the opinion that the organisms of human and bovine tuberculosis were varieties of one bacillus. Moreover, he thought for clinical reasons that bovine tuberculosis could be conveyed to children. Children with local abdominal tubercle rarely became subjects of general tuberculosis except by spread of the disease by way of the lymphatics (past the diaphragm) to the lungs and Dr. Raw thought that bovine tuberculosis was more virulent than human tuberculosis in children.

Dr. G. L. EASTES (London), one of the secretaries of the Section, was next called upon to read a paper by Mr. E. MICHELS (London) and Dr. F. PARKES WEBER (London) on

Two Cases of Obliterative Arteritis in Young Men leading to Gangrene in the Extremities.

The first case was a typical one; it occurred in a Jewish tailor, aged about 27 years at the time of onset. Free from a history of syphilis, ergotism, lead or arsenic poisoning, or alcoholism, he had, however, gone to excess in the smoking of cigarettes and the drinking of weak tea. Paræsthesia in the extremities was first noticed. Three years or so later he had gangrene and acute pain in the left big toe and its removal was subsequently followed by amputation through the leg because ulceration occurred in the stump. Last year pain and gangrene in the right big toe necessitated its amputation, which likewise was followed by amputation higher up. Pulsation could be felt in both femoral arteries. None could be felt in the left radial artery but in all other respects both the upper extremities seemed healthy. When last seen, less than a month ago, the man was complaining of occasional pains in the left forearm and the left thigh. Microscopical sections of the skin of the dorsum and of the extensor brevis digitorum and adductor hallucis of the amputated foot showed practically nothing abnormal, but the sections of the internal plantar artery showed them to be blocked by clot, partly organised where it adjoined the intima which was thickened though its elastic layer was invisible. The tunica media and tunica adventitia showed, also, cellular infiltration. The dorsalis pedis on section showed microscopically its lumen blocked by newly formed connective tissue in which were many blood pigment granules and several small channels lined by endothelium, some of them occupied by red blood corpuscles. The intima was thickened; its elastic lamina, however, remained distinct and wavy, showing that the artery was not distended. The external and middle coats were practically normal. This condition probably resulted from thrombosis and subsequent organisation. No atrophy of the bones of the foot was observed. The question as to whether thrombosis or proliferation of the intima was the final cause of blocking the artery remained undecided. The disease, unlike ordinary atheroma, usually began before 40 years of age and did not lead to hyaline or calcareous changes and in rare instances it seemed to come to a standstill, as in Spencer's case in a man, aged 27 years, which was described at a meeting of the Clinical Society of London in July, 1898, and in one of Pearce Gould's cases. The present case showed no evidence of vessels other than those of the extremities having been attacked. In some cases apoplectiform attacks pointed to the cerebral vessels being involved. The second case was that of a German waiter, aged 25 years, with no history of syphilis or excess in alcohol or tobacco. There was no history of mental disease in his family. Five years ago—two months after his arrival in England from Germany—he began to have swelling of the feet and in two days' time pain and tenderness, especially of the left foot. The swelling gradually subsided but blisters and superficial gangrene occurred in places on the feet. The left foot was the worse and the fourth and fifth toes were lost. Ten months after the onset of the disease he became very depressed from being ill and out of work and tried to commit suicide by shooting himself; the injury was recovered from. Two months later he noticed wasting of the left leg and soon after he was sent to a lunatic asylum suffering from melancholia. He was convalescent from this in less than three months, but during his stay contracture in his left leg became first well-marked. When admitted to the German Hospital a year and eight months after the first onset of symptoms his left leg was affected with persistent spasticity but at times also with violent rhythmical clonic movements, easily excited by handling the left foot which seemed, moreover, to be paræsthetic. There seemed to be slight voluntary control over the movements; purpuric spots and ulcers on the left foot and slight ones on the right were present. Two months later he had considerable wasting and contracture of the muscles of the left leg,

causing pes equinus. The left foot was sometimes cold and its skin was tense, shiny, and livid, sometimes dark purple or blackish, and at others scarcely different in appearance from that of the other foot. Heat or cold applied caused pain but a dependent position did not. Scars of ulcers and effects of the gangrene were to be seen on both feet. The right foot, except for these and some pigmentation and purpuric spots, seemed healthy. The plantar reflexes were absent on each side; the knee-jerk was increased on the left side but diminished on the right side. The left leg was much wasted but its muscles showed no degenerative electrical reactions. Pulsation could be felt in the tibial arteries in both extremities. There were no signs of disease in the thoracic or abdominal organs. There was no albumin or sugar in the urine. The pupils were equal and reacted naturally. No abnormalities of sensation were observed. Mr. Michels performed Chopart's amputation of the left foot; the arteries were not found to be blocked and the wound healed well. When the patient left England, two years and seven months after his first symptoms, the wasting of muscles was much less and he had no pain. Microscopical sections of the skin of the foot, which had been cyanosed for a long time, showed great thickening of the walls of the arterioles. Sections of the internal plantar artery and dorsal artery of the foot showed decided thickening of the middle coat but no endarteritis obliterans or thrombosis. Sections of the extensor brevis digitorum muscle showed characteristic ischæmic myositis with atrophy of the muscle fibres, interstitial fibrosis, and thickened arterioles. The nerves showed nothing abnormal. The bones of the foot were atrophic. A study of this case seemed to favour the view that a variety of obliterative arteritis might commence in the arterioles of the extremities. And although the peripheral nerves microscopically examined appeared to be normal the presence of a nervous element might explain its occurrence and would connect some cases of obliterative arteritis with Raynaud's disease and erythromelalgia as well as with trophic disorders of the extremities in tabes dorsalis and syringomyelia.

Professor THOMAS OLIVER (Newcastle-on-Tyne) was next called upon to open a discussion on

Miners' Diseases.

He commenced by defining miners' phthisis as a disease exhibiting signs and symptoms in the lungs of a more or less chronic character and occurring in miners whose lungs after death were deeply pigmented and somewhat solidified. It was generally regarded as the result of breathing a dust-laden atmosphere—a variety, therefore, of pneumoconiosis—anthracosis for coal miners, silicosis for quarrymen, and chalicosis for gold-miners being appropriate names in the different cases. The ventilation of coal mines and the operation of the mining laws had made miners' phthisis much less common of late years. The disease was first described in 1703 by Ramazzini. In 1860 Peacock identified microscopically and chemically the dust in the lungs of a patient with that in the atmosphere he had been working in, and Zenker showed the same in a girl, the red colour of whose lungs was due to oxide of iron particles which occurred in the air of her place of work where red paint was made. These and other facts showed pneumoconiosis to be a dust disease due to occupation. In this discussion Professor Oliver proposed to consider whether continued breathing of dust could cause phthisis. The operation of such complicating factors as alcohol, syphilis, previous illnesses, and tuberculous infection in the home and elsewhere made human pathology insufficient to solve the problem. The greater part of the dust they breathed never reached the lungs at all but was caught on the mucous membrane of the mouth, throat, and nose, or if it reached the trachea and bronchi was caught by the mucus and removed by ciliary action or by coughing. The lungs, however, of dwellers in towns did become pigmented, yet without symptoms. Causes must occur in order to make the condition pathological. These might be intrinsic, such as defect in the epithelium of the respiratory passages, or extrinsic, such as a heavily dust-laden atmosphere. Naso-laryngeal and ordinary naso-oral breathing, if the mucosa of the upper air-passages was healthy, was shown to be a barrier to the entrance of dust into the lungs by the readiness with which pneumoconiosis developed after tracheotomy. The nature of the dust, its quantity, and the depth of the inspiratory process largely determined its effect on the epithelium of the lungs. Secondary infection might be prepared for by irritation diminishing resistance. In spite of this the lung was able to remove dust if the inhalation of it was interrupted. Control animal experiments supported this observation and it explained the relief obtained by men who after working in a dusty atmosphere were able to have a long break in their occupation. Turning to the pathology of miners' phthisis Professor Oliver related the manner in which the black particles of dust were carried by the wandering cells of the finer bronchi, which were distinctly phagocytic and mobile, through the branched plasma spaces into the lymphatic canals under the pleura and thence by way of perivascular or peribronchial vessels to the bronchial glands. Experiments of feeding amœbæ with coal dust showed that they absorbed without any apparent harm not only fine dust particles but a few quite large particles within 24 hours of its being given to them. In ordinary circumstances the lining epithelium of the bronchi efficiently barred the entrance of dust to their walls. Fibrosis soon followed the entrance of dust to the alveolar walls. But since anthracosis might be present without symptoms and since this fibrosis appeared to result from irritation, some other factor seemed necessary to cause it. Professor George Murray had failed to find micro-organisms in coal. It had been suggested that it was the presence of particles of stone in the dust besides coal. Drawings of sections of the lung of a Transvaal gold-miner who died from phthisis showed excessive fibrosis with signs of catarrh in the alveoli and the presence of large round phagocytic cells laden with pigment. The dust conveyed by these cells exercised an irritant action and led to fibrosis, and subsequent degeneration of the cells which englobed them liberated the dust particles which then lay free in the fibrous tissue. Professor Oliver considered the fibrosis of miners' phthisis to be usually non-tuberculous and possibly a natural attempt to get rid of the dust. Tubercles with giant cells might, however, be found, but to discover tubercle bacilli was difficult. Their presence probably indicated a secondary infection rather than primary. Cavities in anthracotic lung might conceivably result from necrosis following obliteration of vessels by fibrosis or be bronchiectatic, or, as in some cases, might indicate a tuberculous origin. Excepting nitrogen peroxide, a gas which was given off by the higher explosives and which caused acute pulmonary congestion, the inhalation of gases could not be regarded as having any causal connexion with pneumoconiosis. Referring to the experimental production of anthracosis, Claisse and Jouè's work went to show that with soot or charcoal a considerable degree of pigmentation of the lung took place without disturbance of breathing or circulation, but secondary changes due to bronchitis, broncho-pneumonia, the dust itself, or tubercle led to dyspnœa. The hardness of the dust particles was important. Dealing with the relation of anthracosis to tubercle Professor Oliver showed that finding tuberculous lesions in the lung on post-mortem examination did not prove the disease to have been due to tuberculosis, nor, on the other hand, was it always easy to detect the tubercle bacillus when it was present. In the case of the gold-miners' lung clinical and pathological evidence supported the statement that the disease throughout was non-tuberculous. In this connexion the high mortality and bad ventilation in constructing the St. Gothard tunnel were mentioned by Professor Oliver in comparison with the much lower mortality and rarity of phthisis in the Simplon now being made, in which ventilation was very good and stone-dust was avoided, although the workmen's lamps made the air very smoky. Although in the case of the liver the injection of tubercle bacilli into the blood going to it could produce marked fibrosis Professor Oliver did not think that they played any part in the fibrosis of anthracosis but that in some way not yet fully understood the macrophages which conveyed the dust particles into the lung were responsible for its occurrence. The much easier development of anthracosis experimentally after division of the vagi was mentioned but not discussed.

In the discussion which followed Professor J. G. ADAMI (Montreal) agreed with Professor Oliver on the whole as to the pathology but questioned whether the phagocytes played a direct part in causing fibrosis, stating that a large deposit of foreign bodies is sufficient to cause fibrosis without the intervention of phagocytes—as when round a bullet, for instance. He agreed that the occurrence of tuberculosis should be regarded as a secondary condition implanted on weakened lungs and he deprecated the use of the term "coal-miners' phthisis."

The PRESIDENT, who next spoke, also thought "coal-miners' phthisis" a bad term. He saw in coal-miners the condition of "black spit," which he believed to be an aseptic slough of lung tissue much more than a fibrotic condition, while among the men in the freestone quarries intense fibrosis was characteristic of the silicosis from which they suffered. He regarded the strong basement membrane in the bronchial tubes as an efficient agent in protecting them from deposits of dust. The macrophages which Professor Oliver referred to he regarded as really alveolar cells and doubted if they conveyed particles of dust. Finally, he stated that never yet had he seen a case among coalminers of tuberculosis but he had seen many amongst stonemasons.

Professor OLIVER, in reply, pointed out that the softness of the Midlothian coal probably accounted for the absence of fibrosis, while pigmentation was extreme. In reference to the phagocytic view he had based his opinion on the appearances in animals experimented on in which within a few hours of insufflation of dust these large cells were seen to increase in numbers in the alveoli and were seen full of particles in the vessels and spaces. Professor Oliver illustrated his remarks on these cells with some beautiful drawings showing large angular pieces of dust in the alveoli, while in the walls and spaces were seen the large cells containing minute finely divided black granules.

THURSDAY, JULY 30TH.

The business which occupied the attention of the section was a discussion on

Splenic Anæmia.

Dr. H. D. ROLLESTON, who opened the discussion, began by pointing out how vaguely the term "splenic anæmia" had been used in clinical medicine to denote the association of anæmia with enlargement of the spleen when the cause of the enlargement was not due to any well recognised cause. In consequence, the examination of the blood sometimes gave discordant results, since secondary anæmias, such as those due to tubercle or cirrhosis of the liver, might be regarded as splenic anæmia and their true cause found on post-mortem examination. Although, therefore, diagnosis might be a matter of very great difficulty and mistakes were, and often would be, made this did not disprove the existence of splenic anæmia as a disease. Dr. Rolleston then enumerated the clinical characters of the disease in question: (1) splenic enlargement which could not be correlated with any known cause; (2) absence of enlargement of the lymphatic glands; (3) anæmia of a type midway between secondary anæmia and chlorosis; (4) leucopenia or at most no increase in the number of white blood corpuscles; (5) an extremely prolonged course lasting years; and (6) a tendency to periodic hæmorrhages, especially from the gastro-intestinal tract. He next proceeded to discuss the existence of a pathological condition of which these were the symptoms. Cases, he said, did occur which showed after death no lesion but that of a chronic change in the spleen, but more was required of clinical pathology for the diagnosis of chronic splenic anæmia from secondary anæmias, and to know the significance of reaction to the tuberculin test would be of value. The structural changes in the blood, the spleen, the bone marrow, and the lymph glands were next discussed individually, as well as the relation of chronic splenic anæmia to Banti's disease, and finally the pathogeny was dealt with. A diminution of erythrocytes less than in pernicious anæmia and a low hæmoglobin value occurred. The experience of Osler was quoted who gave the average red corpuscles count as 3,425,000 and the lowest 2,187,000 and the hæmoglobin average as 47 per cent. In severe cases poikilocytosis and nucleated red cells, especially normoblasts, were found. The leucocyte count in adults was important. Except for complications causing leucocytosis secondarily such a condition was absent; in fact, leucopenia occurred. The average number in Osler's cases was 4520 per cubic millimetre. More differential counts were needed but there were generally an increase in mononuclear cells and a diminution of polymorphonuclear cells, and according to Da Costa 5 or 6 per cent. of mast cells were sometimes present. The same observer stated that the blood presented no definite picture by which splenic anæmia could be diagnosed from some other conditions and Ewing found similar changes in the blood in lymphadenoma and in gumma of the spleen. In reference to the spleen Dr. Rolleston remarked its enlargement especially in chronic cases; up to 12½ pounds in one case of 13 years' duration and an average of 58 ounces in 13 other cases. Localised thickenings of the capsule occurred and perisplenitis was common. Fibrosis of the organ was seen on section. The microscopic appearances differed but might conceivably have been the result of various stages in the same process. Fibrosis of the organ, atrophy of the lymphoid elements, and fibrosis of the corpuscles of Malpighi with absence of pigmentation or other evidence of hæmolysis were features common to all. The three types of the disease which he then described were: (1) cases which only showed fibrosis of the organ with atrophy and fibrosis of the Malpighian bodies; (2) cases like the first but with endothelial proliferation of the lining of the blood sinuses of the pulp in addition; and (3) rare cases in which endothelial proliferation had so increased that the large venous blood sinuses of the pulp were filled with large cells of from 13 to 16 μ. These cells had clear protoplasm and some had more than one nucleus, while others showed active karyokinesis. Endothelioma or carcinoma had been names applied to this condition which thus simulated them. Gaucher in 1882 described it as primary carcinoma of the spleen and Picou and Ramond in 1896 did the same and suggested that it arose from fœtal inclusions of pancreatic cells, which Peremeschko had previously described. The proliferation of the endothelium spread from the sinuses to the vessels which showed endarteritis, a process which favoured thrombosis and cut off the blood-supply. Endophlebitis of the splenic vein thus resulted and Banti considered that the terminal cirrhosis of the liver was induced by an extension of this process to the portal vein. Extension of the endothelial proliferation from the splenic blood sinuses to the lymphatic vessels and a similar change in the lymphatic glands in the hilum of the spleen had been described. Dr. Rolleston next discussed the relation of these morbid appearances to each other. He thought it unlikely that the proliferated endothelial cells eventually formed fibrous tissue, as Bovaird suggested, or that the endothelial cells passed away leaving only fibrous tissue, for with regard to the latter view the extreme endothelial proliferation occurred in the cases of long duration and with regard to the former view it seemed more probable that a chronic intoxication caused endothelial proliferation simultaneously with fibrosis. The cases with marked endothelial proliferation might have perhaps been uncomplicated cases due to a specific cause, if there were one, while those with fibrosis might have resulted from a mixed infection. The view, however, which Dr. Rolleston himself favoured was that the two conditions were quite distinct. He then suggested some questions which arose as to how far the morbid changes in the spleen were pathognomonic. He knew of no other disease in which endothelial proliferation occurred, but then it only occurred in a few cases of splenic anæmia. The nature of the fibrosis, its distribution in the spleen, and its relation to that produced in rabbits by injection of meta-toluyen-diamine or other substances, or to the result of chronic bacterial poisoning or other chronic inflammatory conditions, should be considered. Recorded observations on the marrow in long bones again gave discordant results. Sometimes no change, and at others extension of the red marrow into the shaft had been found. Of the condition of the lymphatic glands very little was known beyond the anatomical fact that they were not enlarged. Besides this must be remembered Picou and Ramond's observation of the condition of the glands in the hilum of the spleen. In discussing the relation of splenic anæmia to Banti's disease Dr. Rolleston pointed out how other diseases existed of splenic anæmia associated with cirrhosis of the liver which with Banti's disease seemed to form a series: (1) chronic splenic anæmia; (2) chronic splenic enlargement and jaundice but no cirrhosis; (3) Banti's disease—splenic anæmia terminating with cirrhosis of the liver, jaundice, and ascites; and (4) splenomegalic biliary cirrhosis in which the symptoms were the same as in Banti's disease but in which, according to that observer, the condition was one of chronic congestion, while in the disease bearing his name it was one of fibrosis, atrophy of the Malpighian bodies, and diminution of the veins. Chauffard insisted that biliary cirrhosis might result from poisons formed in the spleen having reached the liver by the splenic vein and that the other large tributary of the portal vein tapped another source of poisons—the intestinal canal. If a chronic intestinal intoxication or infection caused the disease removal of the spleen would not cure it as it sometimes did unless the cause at first derived from the intestine had become confined to the spleen subsequently. Recent experiments by Charlton of repeatedly injecting a non-virulent strain of the bacillus coli into the

peritoneum or veins of rabbits were of importance in that he obtained extreme diminution of erythrocytes, a corresponding fall in hæmoglobin with the presence of poikilocytes and nucleated red cells but absence of leucocytosis. In some cases of chronic splenic anæmia microscopic examination of the liver showed slight but arrested fibrosis—a condition almost the reverse of Banti's disease. In dealing with the subject of the pathogeny of splenic anæmia Dr. Rolleston mentioned that sometimes splenectomy might cure the disease and if done for rupture of the organ in healthy people did not induce the disease, which therefore could not arise from suppression of its function. A theory which assumed that hæmolysis occurred in the spleen by virtue of an enzyme manufactured by the endothelial cells, while it accounted for the blood changes since these cells were so increased, failed to explain the cause of their increase, and the blood in splenic anæmia appeared the very opposite of that in pernicious anæmia, where great blood destruction is believed to occur in the portal area. Since removal of the spleen seemed sometimes to have cured the disease it was possible that the anæmia depended on splenomegaly and that they were not both concomitant effects of a chronic toxic or infective condition of the blood, but that this gave rise to endothelial proliferation and later to fibrosis or to atrophy of the Malpighian bodies and to the blood changes. There was no experimental evidence to show that an animal could produce autolysins for its own tissues or that the lymph glands showed such chronic changes as were produced in guinea-pigs by injection of splenotoxin; hence it was unlikely that the spleen produced cytotoxins which destroyed the red and white cells. No micro-organism could be correlated with the splenic change. Until it was settled whether or no the disease was an intoxication or an infection any reply to whether splenic anæmia was an established pathological entity would have to be suspended or given in the negative.

Dr. TREVOR, who was next called upon to speak, described in detail the morbid appearances of the spleen, mentioning its enlargement and increased weight, the localised thickenings of its capsule by perisplenitis or lamellar fibromata, and on section the homogeneous look owing to loss of the speckles caused by the Malpighian bodies. Endarteritis and endophlebitis of the vessels occurred and atheromatous and calcareous patches were met with. An exceptionally remarkable instance of this was shown by Dr. Trevor in the pathological museum; calcification of the splenic vessels was extreme and two aneurysms occurred on the splenic artery. The histological changes met with in splenic anæmia might be summed up as: (1) atrophy of the Malpighian bodies brought about either by an over-growth of the connective tissue ensheathing the central artery or by an encroachment of fibrous tissue from the periphery; (2) thickening of the capsule and the trabeculæ, the walls of the vessels and of the fine fibrous reticulum forming the walls of the spaces of the splenic pulp; and (3) proliferation of the endothelium lining the splenic vessels and blood spaces of the pulp. The proliferated endothelium appeared in the form of large cells with clear protoplasm and peripherally situated nuclei, and in some instances they completely filled the blood space. Occasionally giant cells were present. Dr. Trevor then briefly gave the opinions of various authorities on the pathology of the condition and related an account of each of the three cases from which he had obtained the specimens which he was exhibiting. The patients were all males, aged respectively 23, 53, and 35 years, and the duration in two cases 12 years and nine months respectively. A table of 11 cases which had been drawn up to show whether the period of the disease had any bearing on the sequence of the symptoms gave a negative answer to the question. Dr. Trevor next turned to the consideration of whether the appearances of the spleen described as distinctive of splenic anæmia were really to be taken so, and concluded that judging only from the spleen this would be impossible, yet with the knowledge of changes elsewhere it might complete the picture of a case of splenic anæmia. Finally, in reference to lymphadenoma he thought that the appearances seen in that disease did not resemble those of splenic anæmia.

Professor SENATOR (Berlin) next in his remarks expressed the opinion that splenic anæmia could not be separated from other diseases of hæmopoietic organs. The spleen in this disease exhibited hyperplasia first of the pulp and later of the connective tissue. There was hyperæmia and the cells were very phagocytic, were large and rounded and with large vesicular nuclei. Many cells were probably of hypoblastic origin from the endothelial cells. Professor Senator almost always had found other abdominal glands enlarged. Myelocytes occurred in the blood. The bone marrow showed embryonic appearances (the normoblasts and giant cells were decreased) and collections of lymphoid cells occurred as grey spots. The liver showed alterations of three kinds: (1) small collections of round cells like lymphocytes—metastatic lymphomata; (2) collections of large endothelial cells like those in the bone-marrow and spleen; and (3) cirrhosis, sclerosis of the intima of the splenic or portal vein often due to syphilis, especially inherited syphilis. In some cases cirrhosis was secondary and a consequence of splenic changes. Swelling of the spleen was independent of the liver and was at first due to congestion. The existence of large endothelial cells coming from the spleen pointed to the liver changes being secondary to the splenic. Ascites did not always occur and might occur earlier than in Banti's disease. It might be due to the blocking of the lymphatics, to the swelling of the spleen, or to the congestion of the organs. A specific organism for the disease had been often sought for but never found. Swelling of the spleen might also be due to the condition of the blood, as in malaria, Barlow's disease, &c. The injurious substances coming from the intestine and the constant swelling of the abdominal lymph glands pointed to this. The injurious substances need not always be the same and so different hæmopoietic organs might be affected. Lymphadenoma resulted from the entrance of a noxious agent by way of the upper part of the alimentary tract. Finally splenic anæmia should be united under the term pseudo-leukæmia with diseases of other hæmopoietic organs.

Dr. J. MICHELL CLARKE (Clifton, Bristol) next spoke, mentioning a case in which the erythrocytes numbered 1,900,000 and the hæmoglobin index was 22 per cent. The white cells were 3500 and gave a differential count of polymorphonuclears, 56 per cent.; small lymphocytes and transitional cells, 25·3 per cent.; large mononuclears, 11 per cent.; and eosinophiles, 0·3 per cent. In another case the differential count was the same, and in a third case of only six months' duration the erythrocytes were 3,430,000, hæmoglobin 42 per cent., leucocytes 8000, and the differential count gave normal proportions. He thought that the frequency of severe hæmorrhages must affect the blood count. As to the occurrence of ascites, when it was present it was not always caused by cirrhosis of the liver. Heart weakness with chronic congestion of the liver and spleen and impoverished condition of the blood, possibly by the presence of toxins, might account for it. He thought also that a chain of dark-red, enlarged lymph glands running from the hilum of the spleen along the upper border of the pancreas was of pathological importance. Another important point was the absence of fatty degeneration in any of the organs, thus contrasting with pernicious anæmia and chlorosis. In reference to the cause Dr. Michell Clarke strongly favoured the view that the disease was the effect of a toxin reaching the spleen by the blood stream. In conclusion he referred to some cases of anæmia in which the blood showed the appearance of secondary anæmia, but no cause could be assigned for the large spleen.

Dr. W. EWART (London) related the clinical history of one of his cases of splenic anæmia from which was obtained the remarkable specimen of calcification and aneurysm of the splenic artery.

Dr. F. M. SANDWITH (Cairo) made a few remarks on the occurrence of the disease in Egypt stating that it was not very uncommon in children, so that here alcoholism as a cause could be excluded. Jaundice rarely occurred. In one case of a man, aged 22 years, 30 pints of fluid were drawn off from the abdomen. The liver in this case was not enlarged.

The PRESIDENT, summing up his ideas of what had been stated, remarked that in this disease the spleen was subject to certain conditions of fibrosis and sometimes giant cells were produced, that the liver showed a tendency to cirrhosis, that in the blood the erythrocytes were diminished without there being leucocytosis, and that he thought these might be epiphenomena while the true pathology was to be found from research upon the intestine, the source of a toxin causing hæmolysis and changes in the liver and spleen, and he suggested for research an investigation of the flora of the intestine.

After the discussion the members attending the section adjourned to the lantern room for a demonstration by Dr. CLARKE on **Degenerative Changes in the Spinal Cord in cases of Diphtheritic and Alcoholic Poisoning affecting the Anterior Horn Cells and their Fibres.**

OPHTHALMOLOGY.

WEDNESDAY, JULY 29TH.

Mr. H. E. JULER (London), the President, opened the proceedings with a short address directing attention to the subjects proposed for discussion and then called upon Mr. A. STANFORD MORTON (London) to open a discussion on

The Operative Treatment of Conical Cornea.

Mr. Morton said that the operative treatment of this condition was beset with difficulty and that an examination of the results obtained under varying methods would be useful. He excluded from the inquiry cases capable of improvement by the use of glasses. The object was to flatten the cornea, which could be done either by the cautery, with or without perforation of the cornea, or by the excision of the apex of the cone. He had tried each method and he handed round a record of 13 cases which he had treated, giving the visual acuity of each case with and without glasses, both before and after operation, and also indicating the degree of permanence of the improvement obtained. In the average there was a high degree of improved vision. Excision he had tried first; he preferred a vertical wound, which was more easily protected by the lids. He had used the cautery to burn concentric zones, as favoured by Sir Anderson Critchett, and had in cases perforated the cornea. There were risks associated with each procedure: in excision there was danger from synechiæ, anterior and posterior, from rise in tension, and from hypopyon; in perforation by the cautery the same risks attended. Doubtless these risks were diminished in cauterisation without perforation but they were not abolished. As regards scars, excision left the cleanest cornea. He concluded by reading a letter from Sir Anderson Critchett who agreed that the excision of the cone presented special advantages in some cases, but thought that the best average good result was obtained by the cautery without perforation; he emphasised the necessity of making the central burn as deep as possible.

Mr. J. TATHAM THOMPSON (Cardiff) said that of late he had used the cautery almost solely, burning deeply just short of perforation. The results from this mode were most gratifying. He provided for the scar of the burn by making a small optical iridectomy beforehand.

Dr. KARL GROSSMANN (Liverpool) said that he had given up excision for the cautery. He intended to try the effects of projecting upon the cornea a minute stream of very hot air.

Mr. RICHARD WILLIAMS (Liverpool)—the original introducer of the use of the cautery for conical cornea—said that he preferred to use the cautery and to perforate the cornea. He had never seen hypopyon, synechiæ, or other ill-effects follow; his results were uniformly good. He thought that a deep pit of the cornea short of perforation tended to increase the scar, even to leave a dimple. His rule was, in the case of one bad eye and one improved with glasses, not to operate at all.

Mr. R. W. DOYNE (Oxford) and the PRESIDENT both said that they had formerly practised excision but now always used the cautery.

Mr. MORTON, in reply, said that he did not like sutures in the cornea in any case, much less when, as in this disease, the cornea was peculiarly thin. As regards iridectomy he thought the procedure would be a disadvantage in most cases, since he found the vision markedly diminished on the use of a mydriatic, probably by reason of the loss of the stenopæic fissure existing between the corneal scar and the edge of the pupil. He had performed iridectomy on occasions but only because of special circumstances. On the question of perforation or non-perforation of the cornea in the use of the cautery, he felt that to aim at cauterising just short of perforation was to attempt the impossible, for burning deeply might cause sudden perforation. The size of the ellipse excised by the cutting method should be about two millimetres.

Major HENRY SMITH, I.M.S. (Jallundhar, Punjab), read a paper on

Extraction of Cataract in its Capsule.

He referred to the discussion on this subject at the meeting of the Association in 1901 and to a statement by Mr. Richardson Cross that "the ideal extraction was of the whole lenticular body in its capsule." In India this operation had been practised since the early "seventies" by several officers of the Indian Medical Service and the utility of the operation had been such that he hoped its use would become more general. In the first four months of this year Major Smith had extracted 1023 lenses in their capsules. Of these 99·42 per cent. had first-class results in visual acuity; 0·19 per cent. were second-class; and only 0·39 failures. The dangers of the operation were in the possible escape of vitreous, which occurred in 6·6 per cent.; and premature bursting of the capsule, which occurred in 8 per cent.; but more serious was the leaving behind of portions of the ruptured capsule, which occurred in 4 per cent. of the cases. Such accidents did not necessarily spoil the final result as was indicated by the very high percentage of first-class cases. His method was by an ordinary sclero-corneal incision, with or without iridectomy, as the particular cases indicated (most were done without iridectomy), then steady and long-continued coaxing pressure above and below the corneal incision, above with a spoon, below with a Hunt hook; by this means the lens ligament was ruptured and the lens was delivered entire. The visual results were such that with a + 8 D. lens 60 per cent. of the cases could pass the military dot test at from 40 to 50 feet, whilst 20 per cent. passed at 20 feet.

Mr. N. BISHOP HARMAN (London) said that his only experience of extraction of cataract in the capsule was in a case of hypermaturity with increased tension produced by the irritation of the lens. When the tension was relieved by the making of the initial corneal incision the lens rose up bodily from its resting-place and escaped on to the cheek where it burst, leaving only a little fluid, some capsule, and an amber-like bead, the relic of the nucleus. The case did well, but the occurrence was not one that was pleasing.

Dr. W. A. BRAILEY (London) said that in his opinion the force required to rupture the lens ligament was so great that it would be difficult to avoid loss of vitreous.

The PRESIDENT said that he had seen the operation performed by one of his colleagues at the Westminster Ophthalmic Hospital and there was in most cases a loss of vitreous which was not desirable.

Major SMITH, in reply, said that the pressure required was not a serious objection, for it was gentle and prolonged and hæmorrhage from the tearing of the ciliary processes was very rare. He thought that the difference in the reparative processes in the British and Indian races was not of much account, for if at home there were cases of bad alcoholic subjects there were in India very bad cases of malarial subjects which were, he thought, much the worse to operate on.

Dr. A. DARIER (Paris) read a paper on

The Treatment of Serious Syphilitic Diseases of the Eye.

In grave syphilitic lesions which had proved rebellious to ordinary treatment he recommended that before hope was abandoned there should be instituted an intensive and systematic course of mercury. He employed the intravenous injection of cyanide of mercury in progressively increasing doses, commencing with one or two milligrammes of the salt and rising to as much as five milligrammes daily until the reaction limit was reached, as indicated by the onset of colic. After from 12 to 15 such injections the effect could be much increased by the concurrent subconjunctival injection of the salt. By the adoption of three or four cycles of such treatment with intervening periods of rest and the use of pilocarpine he had obtained most satisfactory results in peculiarly obstinate forms of syphilis of the eye. The treatment should be repeated two or three times in the year.

Mr. SYDNEY STEPHENSON (London) said that he had recently made an extensive trial of Dr. Darier's method in some hitherto hopeless cases; in one such there had been relief of the conditions in three months. He thought that the treatment promised much for the future.

Dr. DARIER also read a paper on

The Subconjunctival Injection of Koch's Tuberculin (T.R.) in a Case of Interstitial Keratitis of Tuberculous Nature.

The case was one of complete degeneration of the cornea; the disease had lasted two years and the sclerosis of the cornea was such that it gave a porcelain-like appearance to the structure. All other means had failed; warmth, fomentations, atropine, mercurials, and even jequirity produced no reaction after the first instillation. He then instilled a strong solution of tuberculin into the cul-de-sac without producing any effect. The subconjunctival injection of the same fluid was, however, most intense in its action; in fact, he feared for a while for the integrity of the eye, but ultimately the eye regained a visual power amounting to $\frac{1}{2}$.

THURSDAY, JULY 30TH.

Mr. EDWARD NETTLESHIP (London) opened a discussion on

Ocular Changes in Relation to Renal Disease.

He said that although much was already known about the eye changes in renal disease information was still needed

both from ophthalmologists and physicians upon several points, and the following heads were suggested as furnishing matter suitable for further investigation. 1. Did albuminuric retinitis ever occur in primary acute nephritis other than the kidney affection of pregnancy? 2. Cases of retinitis from lardaceous disease of the kidneys and from nephritis due to inflammation of the bladder, ureter, or pelvis of the kidney should be recorded. 3. The retinitis of pregnancy. Observation of such cases was desired (1) in which the kidneys were known to be diseased before the first pregnancy and (2) in which there was positive evidence that they were sound. All cases of pregnancy retinitis should be examined for signs of established chronic nephritis. The propriety of inducing premature labour may depend partly upon the diagnosis in this respect. 4. Age and sex. There was a great need for careful records of cases of renal retinitis in young subjects. 5. He recognised two chief factors in the production of renal retinitis—the state of the blood and the state of the retinal blood-vessels. He narrated cases in which a condition of visible disease in the retinal arteries had been noted without evidence of kidney disease; in some such cases there had followed, sooner or later, unequivocal signs of chronic nephritis. 6. It has been recently asserted that the characters of the retinitis in different cases justified inferences as to the kind of nephritis (chronic interstitial or chronic parenchymatous) from which the patient suffered. Attention was called to the importance of watching the course of the retinal disease from beginning to end and of distinguishing between the two kinds of white opacities. 7. Retinitis occasionally occurred in cases exhibiting both glycosuria and albuminuria; they had to determine which produced the eye changes. Retinitis in diabetic persons, whether their urine contained albumin or not, occurred later in life than albuminuric retinitis, but the relative liability of the sexes was about the same as in the ordinary albuminuric retinitis (excluding pregnancy cases). 8. Other points that needed elucidation were: the influence of scarlet fever and inherited syphilis in producing the chronic renal disease leading to retinitis; the occurrence of renal retinitis in only one eye; cases in which more than one attack of retinitis had been seen and watched through, with special reference to the changes left by the first attack and to the effect of retinal atrophy upon the characters of a second attack; the cause of the frequent peripheral pigmentation left by renal retinitis; the cause of the night blindness occasionally met with in renal retinitis; the nature and ophthalmoscopic appearances of the choroiditis said to occur in some cases of albuminuria; and the nature of the white, opaque thickening of the coats of the arteries and the veins seen after some cases and of the appearances resembling retinitis pigmentosa after others.

Dr. GEORGE CARPENTER (London) said that observation had led him to the opinion that the most frequent cause of retinal changes found in children was congenital syphilis.

Mr. HENRY POWER (London) narrated two cases which well illustrated the variability of the prognosis to be attached to the symptoms according to the condition of the subject. In the first case a man, aged 35 years, there was sudden impairment of vision, spots appeared about the fovea which seemed to indicate albuminuric retinitis, yet neither he nor the physician could find albumin in the urine. Three weeks later the eye changes had increased and the vision diminished; then there were abundant changes in the urine and death followed rapidly. In the other case, during a pregnancy there were marked eye changes. He thought then the prognosis was grave, but the patient had recovered completely.

Mr. GUSTAVUS HARTRIDGE (London) was inclined to think that the prognosis might follow the radical distinctions of the causes of the conditions. In one case the cause was of a toxic nature—changes in the blood; of this order were the cases occurring in pregnancy. The second order of cases arose from changes in the blood-vessels; these were much more serious cases and death was much more likely to follow at an early date. He was inclined to think that pigmentation frequently followed the retinitis of pregnancy and that this pigmentation indicated the high-water mark of the œdema.

Mr. A. Q. SILCOCK (London) said he had failed to find retinal changes in cases of surgical kidney even when there was prolonged suppression of urine from obstruction by calculi or otherwise. On the other hand, he found such changes were common in the nephritis of cardio-vascular origin.

Dr. R. A. REEVE (Toronto) narrated the case of a young man who had come under his care and in whom there was sudden visual failure with typical retinal changes. Death ensued in one month.

Mr. DOYNE (Oxford) asked what importance was attached to the supposed compression of veins by arteries. He did not think the lumen of the vein was seriously diminished by such overlying—at any rate, not so as to cause distal accumulation of the blood—seeing that the arteries were at the same time diminished in calibre by degenerative changes. The fact that the early symptoms of the disease were much more frequently seen in women than in men he accounted for by the greater number of women attending hospitals, men refraining from attending until the latest date possible.

The PRESIDENT emphasised the uncertainty attending the prognosis to be attached to such retinitis. Doubtless the prognosis attending albuminuric retinitis was serious but it was not wise to predict early death for all cases, for in some such instances the patients condemned were yet alive.

Mr. NETTLESHIP replied.

Dr. K. GROSSMANN (Liverpool) read a paper on

The Mechanism of Accommodation.

He demonstrated by lantern slides the observations made as to the influence of the instillation of strong solutions of eserine in the case of a young man whose eyes presented the conditions of aniridia and fine anterior and posterior polar opacities, the bulk of the lens substance being quite clear. The eyes were hypermetropic to + 7 D.; there was some corneal astigmatism. By careful measurement he was able to demonstrate changes of shape and position of the lens on using eserine; the diameter was diminished by two millimetres and the thickness at the centre by 1·4 millimetres; there was an increase of spherical aberration and the lens moved upwards and inwards. He considered that these observations supported the theory of accommodation propounded by Tscherning.

Mr. BISHOP HARMAN said that he did not under-estimate the interest of the case, but he thought that it was a little dangerous to utilise such observations as these in support of a theory relating to such an intricate phenomenon occurring in healthy well-developed eyes; the eyes on which Dr. Grossmann had made his observations were distinctly abnormal; there were aniridia and cataracts and the change of position of the lenses on the instillation of the eserine seemed to him to indicate that there was also some deficiency of the suspensory ligament.

Mr. SILCOCK and Mr. NETTLESHIP also asked questions concerning the case.

Mr. W. A. HANCOCK (London) and Mr. W. T. LISTER (London) communicated a paper on

Some Rare Epithelial Tumours of the Conjunctiva.

In all they had observed four cases, two in young subjects and two in adults; the conditions were of varying duration, one being as long continued as ten years while another was first seen after three months' growth. Their position differed in each case. The affected portions had been excised and the tissue had been examined histologically. Mr. Hancock and Mr. Lister showed lantern slides of the sections. The thickenings were seen to be due to a simple hypertrophy of the epithelial layer. There was no evidence that they were in the nature of dermoids, they certainly were not malignant, and there was no suggestion of a xerosis formation. In one case only there was a history of injury preceding the formation. They noted that similar epithelial plaques had been described by French authors.

Mr. STEPHENSON read a paper on

Interstitial Keratitis in Acquired Syphilis.

He recognised two varieties of corneal affections in syphilis: (1) general parenchymatous keratitis; and (2) the "keratitis punctata" due to a specific infiltration of the interstitial substance—a localised gummatous condition. He narrated several cases of the conditions described by others and one that had recently come under his observation. The consensus of observation was that the affection was most commonly unilateral and that it readily responded to mercurial treatment. He thought that a fair number of cases of interstitial keratitis in young children might be more correctly ascribed to a mild acquired taint rather than to the congenital. As regards the position of the manifestation with relation to the general course of the disease he

thought that it was distinctly tertiary, an indication which was supported by the common association of choroiditis. It had been said that vascularisation of the cornea was not so common in the acquired form as in the congenital; this was not wholly his experience.

Mr. C. DEVEREUX MARSHALL (London) mentioned a case which had come under his notice where the choroid was seriously and first affected, the keratitis being much later.

Mr. STEPHENSON replied.

Mr. DOYNE read a paper on the

Treatment of Atrophic Retinæ with Retinal Extract.

His first idea in attempting this form of treatment was the possibility of supplying the diseased retina with a supply of food likely to be useful to it; the results of his experimental use of the extract on cases was such that he was now inclined to think that the retina contained some active principle which had an influence upon its nutrition. He insisted on the necessity of using the fresh glycerine extract; extracts of stale eyes he had found to be useless. There was some difficulty at present in getting the eyes, especially as the tentative dose was from six to ten fresh eyes daily. He confessed his willingness to ignore any effects produced in cases of hysterical amblyopia, for such cases were notoriously easy to treat by any suggestive and impressive procedure. He relied upon the results obtained in retinitis pigmentosa (five cases), in every one of which real and distinct improvement was found, and in toxic amblyopia (four cases) in which he considered the improvement in visual acuity to be more speedy than that following ordinary treatment.

Mr. STEPHENSON said that he had made use of this treatment in one case of tobacco amblyopia with what he considered to be important results. He suggested the use of the extract by subconjunctival injection.

Mr. NETTLESHIP wished to point out that sufficient emphasis had not been laid on the condition of the tobacco amblyopia which had been treated. Acute cases did normally recover quickly. He did not wish to appear hypercritical towards a possibly valuable mode of treatment, but in one of the cases quoted by Mr. Doyne he had not been able to convince himself that there had been an appreciable improvement.

Dr. F. W. EDRIDGE-GREEN (London) said that after his investigation into the visual purple of the eye he had tried to prepare an extract of this substance which might be used medicinally; he had not succeeded. He thought that such a mode of medication as attempted by Mr. Doyne was both possible and physiological.

Dr. DARIER said that he had attempted several modes of such treatment some years ago after the publication of Brown-Séquard's work. He had injected various ocular extracts subconjunctivally and he had obtained in some cases some improvements, but such possible improvements were quite transitory. Further, he had had similar transitory benefits following the subconjunctival injection of various iron salts. He confessed that he was surprised to hear of Mr. Doyne's successful results by ingestion by the mouth when direct local applications had failed.

Mr. DOYNE replied. He said he was hopeful that the matter would be taken up and given a fair and exhaustive trial.

Tests for Colour Blindness.

Dr. EDRIDGE-GREEN brought forward the following motion:—

> That the council be requested to give effect to the resolution passed by this section last year that a colour-vision committee be appointed to recommend an efficient test for colour blindness.

He said that in the experience of many the present official tests were inefficient; very many varieties of colour blindness escaped detection, whilst some perfectly normal folk were rejected by it. Several such cases had been recently published.

Mr. W. M. BEAUMONT (Bath) thought that the matter ought to be taken up by some efficient body so that the two tests—that of Holmgren as now used and the test put forward by Dr. Edridge-Green—might be fairly considered.

The PRESIDENT put the motion to the meeting and it was agreed to without dissent.

DISEASES OF CHILDREN.

WEDNESDAY, JULY 29TH.

The Pathology and Treatment of Chorea.

Mr. ARBUTHNOT LANE, the President, was in the chair.

Dr. D. B. LEES (London) opened this discussion, remarking in the first place on the inadequacy and incorrectness of the term "chorea," inadequate because the disease was not merely muscular and incorrect because the lesion did not manifest itself in purely rhythmic movements and certainly not in dancing displays. The muscles most markedly under voluntary control were those most decidedly affected. Hence the muscles of the face, the tongue, and the hands were more perceptibly involved than those of the trunk and lower limbs, while those of respiration might suffer and that of the heart escape. He therefore thought that chorea must be considered as a disorder of the brain and particularly of the motor area. But there would appear to be in some instances an implication of the purely mental functions, as evidenced by the emotional and other similar manifestations shown by the young sufferers. There seemed, possibly, to be an overflowing of the impulses to the speech centre to the motor centres, with the result that the child when asked a question would answer as it were by primary choreic movements of the hands and facial muscles. The motor centres were not only irritable but were also actually weak—in fact, true paresis was by no means infrequently present. In some instances speech might be actually lost from possible involvement of the laryngeal muscles and not recovered for many months. It was interesting to note that even a kindly question might induce an emotional storm, with a downpour of tears, but no verbal reply. Marked anæsthesia was but seldom a symptom of chorea. An actual affection of the spinal cord or of the peripheral nerves might possibly be in evidence, as witnessed by occasional increase in the knee-jerks, in flying neuralgic pains, in the rare optic neuritis, and the accompanying constipation. In chorea what was most prominent seemed to be a disorder of the whole cerebral centres and in some cases possibly of the entire nervous system. But this lesion had the peculiarity of not being destructive—in fact, it was usually completely recovered from. Was it not, then, of the nature of a toxæmia, though probably not a toxæmia pure and simple, owing to its very localised effect in many cases? The relationship, to his mind, of chorea to rheumatism became more and more evident the closer the phenomena of the two diseases were examined. He believed that much could be learned from a closer attention to statistics bearing on the after-history of children who not having had rheumatism previously to an attack of chorea were afterwards smitten with it and he alluded to some significant figures in this relation obtained by Dr. F. E. Batten. Much importance must be attached to the recent valuable researches of Dr. F. J. Poynton and Dr. A. Paine into the bacteriology of rheumatism and their bearing upon chorea. It must now be acknowledged that there was a distinctive evidence of a morbid blood-state in chorea. There was the same also in rheumatism and any of the manifestations of rheumatism might therefore occur along with chorea and, in fact, choreic movements might in reality be the first symptom of rheumatism and rheumatism should be suspected in every case. The exhibition of anti-rheumatic modes of treatment had an undoubted success in acute chorea, provided they were vigorously pushed. Large and frequent doses of salicylates were required. The supposed depressant action on the heart muscle was in reality due to acute rheumatic dilatation of that organ and the drug was in no way responsible for it. Chronic cases were naturally not so markedly influenced by salicylates and probably because the motor centres might remain unduly excitable long after the action of the micro-organisms had ceased. Yet even in these cases salicylates were of decided service, as also were other remedies, such as arsenic, antipyrin, and ergot. He was certain that every case of chorea should be kept in bed in its early stages and treated exactly as for acute rheumatism, when distinct improvement would soon manifest itself.

Dr. H. ASHBY (Manchester) felt that Dr. Lees had unduly exaggerated the connexion of rheumatism with chorea and therefore he was perhaps too sanguine in the results of treatment by those drugs which were of such great service in true rheumatism.

Dr. THEODORE FISHER (Clifton) was convinced of the not uncommon association of cardiac manifestations in the course of chorea and brought forward statistics which bore out his contention.

Dr. W. EWART (London) also drew attention to distinct cardiac lesions occurring in choreic patients and mentioned specific instances of the same.

Dr. G. J. CRAWFORD THOMSON (London) questioned the advisability and utility of large doses of salicylates.

Dr. F. J. POYNTON (London) drew attention to what he believed was an important factor in the production of the choreic movements—namely, the affection of the pia mater, induced probably by the toxin present in these cases.

Dr. E. CAUTLEY (London) thought that the almost, if not entire, absence of hyperpyrexia in choreic cases was an argument against the rheumatic origin of the disease.

Dr. M. O'SULLIVAN (Dublin) read a paper on the Complications, Course, and Treatment of Chorea, based on the careful observation of 54 cases. In many there was a distinct traumatic history. In no case were choreic movements the result of imitation. Mitral regurgitation was not infrequent as a cardiac complication. He had been much struck by the large and sometimes flabby condition of the patients' tongues. Cardiac mischief was most frequent in recurrent cases. With regard to the condition of the superficial and the deep reflexes in cases of chorea, in some both were exaggerated, in others the deep reflexes were well marked while the superficial were absent, and in others the superficial were well pronounced while the deep were wanting, and still more rarely both sets might be absent. The treatment adopted had been chiefly prolonged rest of mind and body, while arsenic was used as the best drug. Salicylate of sodium was given as a preliminary in cases with rheumatic symptoms.

Dr. G. CARPENTER (London) and Dr. J. R. LOGAN (Liverpool) took part in the further discussion and Dr. LEES briefly replied, stating that he was so convinced from his actual experience of the value of salicylates in the treatment of chorea that he regarded them in the light of a specific for the disease.

The Relation of the Thymus Gland to Marasmus.

Professor RUHRAH (Baltimore, U.S.A.) said that there were two forms of atrophy of the thymus gland, primary and secondary. The organ had an undoubted relationship to nutrition. In a large number of fatal cases of marasmus in infants he had never failed to find what appeared to be primary atrophy of the thymus.—Dr. POYNTON, Dr. ASHBY, Dr. EWART, Dr. LEES, Dr. CARPENTER, Dr. R. B. MCVITTIE (Dublin), Dr. FISHER, Dr. LOGAN, and Dr. C. PINKERTON (Southport) took part in the discussion.

Note on the Age for Operating in Cleft Palate.

Mr. R. W. MURRAY (Liverpool) read a note on this subject. He said that the chief object for which such an operation was performed was that the power of speech might thus be rendered more perfect than it would otherwise be. At the same time he drew attention to the fact that the defect in articulation in these cases was not certainly due to the cleft of the palate but was in large measure due to the imperfect development of the nasal chambers. If the bones of the hard palate were involved the subsequent power of speech would never be perfect, even though an operation had been successfully performed during infancy. If, on the other hand, the soft palate alone was involved, articulation might subsequently be perfect. He drew special attention to the great importance of closing the cleft during the first two years of life and within this age limit the later the operation was performed the better.

The PRESIDENT pointed out that the development of the naso-pharynx must be encouraged as much as possible to induce correct speech and the sooner the cleft was closed the better. Therefore the earlier the operation was performed the more satisfactory was the result. In some cases he advocated operation even within a few days of birth.

Dr. GARROD THOMAS (Newport) supported the President in his opinion that an early operation should be undertaken.

Dr. H. ASHBY (Manchester) pointed out that many a case of cleft palate succumbed after operation or even without operation owing to some concomitant brain deficiency.

THURSDAY, JULY 30TH.

Congenital Dislocation of the Hip.

Mr. F. F. BURGHARD (London) opened this discussion with a prefatory account of the changes usually met with in cases of congenital dislocation at various periods of life, specially referring to the rôle of each in preventing the reduction of the dislocation. The deficiency in the acetabulum favoured relaxation; the changes in the capsule—especially the anterior portion—opposed the return of the head of the bone into the acetabulum; the alteration in the angle of inclination of the neck to the shaft of the femur and the rotation of the long axis of the neck upon the vertical axis of the shaft were also changes of practical importance. He then described the different forms of congenital dislocation met with clinically and gave a short description of the methods at present in vogue for the treatment of this affection with regard to reduction of the dislocation by the method termed the "Hoffa-Lorenz operation." He thought that risk of ankylosis followed the extensive alterations produced in the articular surfaces, while the difficulty of obtaining a true radical or anatomical cure by Lorenz's bloodless method could be demonstrated by radiography. An open operation not involving interference with the conformation of the articular surfaces offered better chances.

Mr. ROBERT JONES (Liverpool) believed that more than one way existed for the cure of congenital dislocation of the hip and that the same method would not suit all cases. He thought that more good would come from a study of the causes of failure than from the most carefully compiled statistics. For years they had tried methods which had yielded an occasional success, such as extension and abduction in an abduction frame, osteotomy of the neck to correct anteversion, manipulations for reductions, and various forms of operation procedure. Neither the Hoffa nor the Lorenz modification appealed to him as stripping a joint of its cartilage and whittling the head of the former directly made for an ankylosing arthrodesis. The essential difference between the methods of Paci and Lorenz was in the recognition by Lorenz of the rudimentary character of the acetabulum and the necessity of enlarging it by direct pressure of bone. In support of the probability of this occurring Mr. Jones related that in a lad, aged 17 years, in whom he exsected the head of the femur for a traumatic dislocation he found an excellent attempt at the formation of an articulation. Until the visit of Lorenz he had no idea of the thoroughness of his manipulations and he at once saw why so many failures had occurred in this country. Since his visit Mr. Jones had operated on 38 cases, 34 of which were reduced as confirmed by palpation and x ray photographs, most of which were shown at the meeting. In four cases the neck of the femur was fractured and the shafts were transposed anteriorly. These were the only complications and with an increase of experience he thought should not occur. The causes of failure in reduction were fold of the capsule between the acetabulum and the head of the femur, sometimes constriction of the capsule, the importance of which was overrated, anteversion of the neck, and instability of the articulation due either to faulty head or rudimentary acetabulum. Of immense clinical importance was the question, "Can these defects be recognised clinically?" In reply he thought that on completion of reduction the surgeon could tell whether it would be permanent or not. If the hip in the act of being reduced gave the sensation experienced in the reduction of a traumatic case and if there were stability after reduction the prospects were good. Failure might safely be predicted when the femur slipped out of joint on the slightest provocation. In this last variety exploratory incision was called for to correct soft structure obstruction and to correct anteversion of the femoral neck. Anteversion could be diagnosed by radiography as well as by palpation. If operation were done Mr. Jones strongly advocated incision while the dislocation was reduced and if anteversion existed the performance of osteotomy of the shaft of the femur, the neck being held in position, as recommended by Schede and Bradford. He agreed with Mr. Burghard that it was best not to denude the cartilage, but in the worst cases, where operation was most called for on account of anatomical misfits, how was the head to be retained short of excavation! Mr. Jones, in view of the diverse opinions, intended to persevere with the Lorenz method as a routine, operating only in exceptional cases and after a sufficient lapse of time, and forming his own conclusions with regard to the final results.

LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, JULY 29TH.

Dr. PATRICK WATSON WILLIAMS (Bristol), the President, delivered a short address on

The Position of Laryngology and Otology in the Medical Student's Curriculum.

After extending a very cordial welcome to the distinguished *confrères* who, in response to an invitation, had come from afar to take part in the work of the section, the President spoke of the necessity for the more systematic training of medical students in the clinical examination of the nose, the throat, and the ear, so that every qualified

practitioner might be familiar with at least their commoner diseases and be able to interpret those phenomena which in their pathological significance directly bore on general medical diagnosis. Laryngoscopic examination as an aid to diagnosis in general medicine, he said, was not less valuable than the examination of the eye. The detection of a vocal cord paresis or paralysis often proved invaluable in the early diagnosis of central nerve disease, such as tabes dorsalis or bulbar paralysis, while every laryngologist knew full well that the larynx frequently yielded the one and only definite physical sign pointing to the existence of an intrathoracic aneurysm or other less common form of intrathoracic tumour. The distinction between a simple laryngitis and paresis of an otherwise healthy vocal cord was not a difficult matter and yet from want of a little familiarity with the laryngoscope it was often enough beyond the ken of the young practitioner. Therapeutical success in medicine depended especially on the recognition of serious disease in its earlier and more tractable stages. They were no longer content to await the development of the grosser manifestations of advancing laryngeal tuberculosis before diagnosing the disease and adopting measures for its arrest. Every practitioner should realise the possible clinical import of simple hoarseness and should have sufficient knowledge of the larynx to be put on his guard ere the thickening of a cord or the localised tumefaction on a vocal process or in the interarytenoid fold had either spread locally or had masked the existence of an early pulmonary lesion till it progressed beyond the possibility of cure. Speaking of the radical extirpation of cancer he deplored the lamentable number of cases that passed beyond the hope of relief simply for want of earlier diagnosis. He went on to say that at the medical examinatio n for entry into the navy and army the teeth were carefully inspected. Many candidates were thrown out for some error of refraction that could be remedied by wearing spectacles or for some defect in chest measurement of little importance in after life, and so forth, yet unless the candidate was obviously deaf the existence of serious aural disease might escape observation. Quite recently a young gentleman directly after passing his medical examination for the army had consulted him on account of deafness which had been noticed for six or seven years. He had nerve deafness and could not hear the watch on contact on one side, whilst the hearing on the other side was only $\frac{1}{6}$ths of the normal. He had touched on one or two of the more striking points to show how essential some elementary knowledge of laryngology was in general practice and to support his plea that it should no longer be left to the student's discretion whether he attended the hospital clinics or not. Post-graduate teaching was an altogether different matter, and while invaluable as a means of extending the practitioner's knowledge of all the special and higher branches of medicine and surgery it was beyond the reach of many medical men and therefore it should not be relied upon as the chief, if not the only, means of obtaining elementary practice in the treatment of any regional diseases.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 29TH.

Staff Surgeon J. FALCONER HALL communicated a paper on

The Water-supply for Landing Parties and Naval Brigades.

Owing to the many sudden and unexpected calls on the navy for landing parties in all parts of the world it was necessary to be always ready to meet such emergencies and the water-supply for a landing party was of vital importance to its success. In every landing party a certain number of men under a petty officer should be told off to attend to the water-supply and their sole duty should be to attend to its purification and transport. The men landed must be taught what had aptly been called "water discipline." It was quite easy to tell the men the risks they ran from drinking impure water, but it was much more difficult to prevent them doing so and to get them to have a little patience until a sound supply was procured. For drinking and cooking six pints per day ought to be the minimum and in hot climates this should be increased to at least nine pints and transport should be arranged to allow this quantity. Distillation was undoubtedly the best method of purifying water, but this was next to impossible to do while on the march. The next best method was to boil the water. Filters were often of the greatest use, but only if proper precautions were taken. The chemical methods were practically useless, as for the most part they could not destroy active bacilli and were too complicated for the men to understand.

Fleet Surgeon JOHN LLOYD THOMAS, R.N., read a paper entitled

A Surgeon's Notes with the Naval Brigade in China.

The paper gave an account of the writer's experience with the Naval Brigade which formed part of the China field force for the relief of the Pekin Legation in 1900. The Naval Brigade numbered 535 officers and men and the proportion of sickness was 15 per cent. of the total strength, or 2·21 men sick per diem. Of these 9 per cent. were bowel complaints. There were five cases of enteric fever, one ending fatally. There were 12 cases of dysentery, with one death. The personal observation of the author went to prove that the trouble was due in nearly all cases to drinking bad water. It was almost impossible to control the impatience and carelessness of the men in drinking water and their choice usually was the handiest water. There were 31 cases of diarrhœa, the symptoms being of sudden onset, beginning with abdominal cramp, but no fatal case occurred. The condition took the form of a gastro-intestinal inflammation and he was disposed to think that this was due chiefly to mechanical irritation of the mucous surfaces of the stomach and intestines and the presence of solid matters which had been ingested in a condition of suspension in various vehicles. The causes of nearly all these cases were ascribed first to water and secondly to food. The 31 cases did not represent the full number of those who suffered from this affliction; nearly everyone suffered from the "gripes," with six or seven stools during the 24 hours. Simple remedies sufficed to cure the complaint, whilst bland and nourishing food was given to replenish the system. If the cause of the affection was accepted as a purely mechanical and irritant one then the remedy should be to restrict the drinking water to that which had been carefully filtered. 12 cases of sunstroke were placed on the sick list because the men were incapacitated for an appreciable period. These did not include transient cases. Of the total cases two ended fatally. The treatment was water by the stomach and to the skin. When close to the river the patient was partially immersed or the head and body douched on the bank, with the legs dangling in the stream. This generally resulted in speedy recovery and the first sign of improvement was the desire for drink. The immediate after-treatment consisted of simple bland restoratives.

Lieutenant-Colonel H. G. HATHAWAY, R.A.M.C., communicated a paper entitled

Some Notes on a Mounted Bearer Company.

The author described a cart which he had invented, consisting of a light platform on strong springs over four wheels, the sides of the cart hinging down arranged after the fashion of an Irish car. The cart carried six sitting patients, three on each side, or two lying-down patients on stretchers. After describing the detachment of five men required for the service of these carts the author concluded by stating that it was unnecessary to have mounted bearer companies established in peace time, it being sufficient in his opinion to keep enough men in each squadron of cavalry for two such cart detachments always thoroughly instructed in first-aid to the wounded. Beyond that and the ability to ride nothing more was expected of them because they handed their patients over to the field hospitals for nursing at the first opportunity. For that reason it was not needful to employ men of the Royal Army Medical Corps on mounted bearer company duty.

In the discussion which followed on the three papers Lieutenant-Colonel M. W. H. RUSSELL, R.A.M.C., pointed out that care in regard to the drinking water was not an entirely new procedure on field service and detailed the routine followed in the Nile Expedition of 1884-85.

Deputy Inspector-General H. M. ELLIS, R.N., said that in regard to the water discipline of troops it was impossible for civilians who had never felt the stress of battle to realise the overwhelming temptation that came over troops when they felt that they were almost dying from thirst.

Surgeon-Major J. ARNALLT JONES (Aberavon) speaking as a volunteer surgeon, wished to congratulate Fleet-Surgeon Thomas on his paper.

Surgeon-General G. J. H. EVATT, R.A.M.C., spoke of the American system of extra food supply in addition to rations in the field.

Dr. H. E. L. CANNEY observed that in regard to the water-supply it would have been far easier to carry out the purification of water with the rapid sterilisers he had proposed to be used.

THURSDAY, JULY 30TH.

Surgeon-Captain G. ARBOUR STEPHENS (3rd Glamorgan Rifle Volunteers) read a paper entitled

Poverty of Attraction for Men to become Stretcher-bearers and the Consequent Inefficiency of that Section.

The value of the medical officer, he said, depended upon the material at his disposal, for however good he might be from a professional point of view without the needful assistance he was helpless. He stated that the volunteer regimental stretcher-bearers were an irregular squad of the most incompetent men ever detailed off for such work. That was the result of the absurdity of the system which prevailed and not the fault of the men. From each company two men were told off for ambulance work and each company officer, naturally retaining his best men, detailed for ambulance work the two most inefficient men he had. These men the medical officer was supposed to educate in a course of 12 lessons in anatomy, physiology, minor surgery, stretcher drill, and nursing. Good men would scarcely be considered very competent at the end of such a course and consequently the stretcher section was of absolutely no use whatever. There were about 223 volunteer regiments which gave a total volunteer ambulance strength of 3568 men, and this was in his opinion a sheer waste of red and blue serge. The author concluded by asking what there was to attract good men for the stretcher section? It was always to the rear of the regiment, the last into camp, and the last to have quarters allotted to it. The section received neither thanks nor prizes and good results could be hardly expected.

Brigade-Surgeon-Lieutenant-Colonel P. G. GILES (Welsh Border Brigade) communicated a paper entitled

Training Ambulance Men of Yeomanry.

He considered that difficulties would arise until some suitable means of removing a wounded yeoman was established. It had occurred to him that the best method would be a light ambulance cart near the ground that would accommodate itself to the movements of the horse without affecting the comfort of the patient and he described such an ambulance cart with an oblong hollow steel frame divided into three compartments. In his opinion the transport of wounded men of mounted troops by means of riding supported either by another trooper or by means of straps and cords was very slow and unsatisfactory. Panniers were exceedingly difficult to load and really required two patients to balance properly. The method of carrying the wounded man in front of another trooper might be suitable for Victoria Cross competitions and had often been of use, but it was certainly unworthy of a place in the transport of the twentieth century.

Captain WILLIAM SHEEN, R.A.M.C. (Volunteers), read a paper entitled

Suggestions regarding the Personnel, Equipment, and Training of Medical Units attached to Volunteer Infantry Brigades.

He advocated that the medical unit attached to a volunteer infantry brigade should combine the functions of a bearer company and field hospital and this he believed was considered by many to be the best arrangement for the regular Royal Army Medical Corps. For such a unit he suggested the title of "Field Medical Company." A most useful article of equipment for a volunteer medical unit was a combined wagon and tortoise tent. He regarded as an essential improvement of the army ambulance wagon that it should be made to carry four patients lying down on stretchers. In training a volunteer medical unit the manual for the Royal Army Medical Corps should be looked upon as a guide and its drill varied to suit circumstances. He considered that far too much stress had been laid on the application of tourniquets. In not one of 342 cases of bullet and shell wounds admitted off the field into the Imperial Yeomanry Field Hospital was a tourniquet required. The author concluded by giving a short sketch of a typical Saturday afternoon field day for a medical unit.

In the discussion on the three papers which followed Mr. J. W. DAVIES (West Cross) said that proper instruction could only be carried out with the aid of a sergeant-instructor.

Surgeon-Captain A. E. LARKING (Folkestone) said that the only way to get together a good stretcher squad was to enlist men specially for ambulance work. He thought sooner or later that it would be found necessary to pay regimental medical officers on account of the expense entailed.

Surgeon-General EVATT said it had been decided that volunteer infantry brigade bearer companies were not Royal Army Medical Corps Volunteers.

Surgeon-General H. S. MUIR, C.B., (London) spoke of the efficiency of the Manchester Royal Army Medical Corps Volunteers, which corps he had had the opportunity of watching when principal medical officer of the North-West District a few years ago.

Surgeon-Major JONES said that the position of the volunteer regimental bearers was unsatisfactory. To enlist men directly into bearer sections meant a heavy tax on the purse of the medical officer.

Dr. CANNEY thought that the country should no longer make heavy financial demands on civilian medical men. He suggested that a commission should be formed representing volunteer and regular forces to advise the country on the point.

Captain SHEEN, in replying, said he was surprised to hear from Surgeon-General Evatt that volunteer infantry brigade bearer companies were not Royal Army Medical Corps volunteers. The men of the Welsh Volunteer Infantry Brigade bearer company were supplied with shoulder-straps bearing that designation, but these had recently been changed to straps bearing the lettering, "R.A.M.C., Welsh V."

Surgeon-Captain STEPHENS said that Surgeon-General Evatt had stated that if volunteer medical officers did their duty they would not court popularity with their combatant *confrères* but would reject a large number of men. He informed Surgeon-General Evatt that if that course were followed no volunteer regiment would be up to strength and the chance of getting regimental bearers would be reduced to a minimum.

FRIDAY, JULY 31ST.

Surgeon-General EVATT gave an address on

War Work.

His remarks on the military medical services constituted a sketch of the evolution of the regular, militia, and volunteer medical services in peace and war from the Crimean period through the unification period up to the present day, with suggestions as to the future developments of the military medical service in all its branches.

Surgeon-Major JONES referred to the valuable services rendered to volunteer medical aid by Surgeon-General Evatt, especially through his inducing the students of the great medical schools to join the volunteer bearer companies.

Inspector-General H. C. WOODS, C.V.O., C.B., R.N., in the course of his remarks informed those present that a scheme had been prepared for forming a reserve force of civilian medical officers for the Naval Reserve.

THE ANNUAL MUSEUM.

III.—SANITARY APPLIANCES, DISINFECTANTS, &c.

Sanitary appliances were represented chiefly in disinfectants, filters, stoves, special clothing, and sanitary ware. The Pure Enamel Bath Co., Limited, of Imperial Works, Bromley-by-Bow, London, E., exhibited two models of baths enamelled with a beautiful porcelain glaze. We have already shown that this glaze is free from lead and all materials susceptible to the action of sulphur baths or other medicated baths. A series of samples was exhibited showing the permanency of the enamel under tests including even the trial of alkalies and acids, hot and cold sea water, strong saline water, sulphur water, carbolic acid, effervescing baths, sulphuretted hydrogen water, and other mixtures employed in balneo-therapeutic practice. A specially high resistant enamel which was proof against acids and alkalies alike was also shown. The process is inexpensive and the result is an enamel amalgamated, so to speak, with the iron of the ordinary cast-iron bath in such a satisfactory way as to present the appearance of a porcelain bath. The gloss is good and the colour is pure. Close by Messrs. John Legg and Sons, engineers, of Swansea, exhibited a hot-water calorifier. This provides for a circulation of clean hot-water through a building already fitted with a hot-water installation. It consists of an iron cylinder through which the circulation of the ordinary hot-water-supply is maintained. In this cylinder is contained a hollow copper cone connected with distributing

pipes. The cone and the water inside it are heated by the water in the iron cylinder. Circulation is readily established by means of an inlet and outlet pipe. In a word, the calorifier is a secondary heating apparatus in which the heating of the water is effected by the hot water of the primary hot-water apparatus. In this way water is not drawn off direct from the boiler. The same firm show a hot-water radiator which can be swung like a gate from side to side in accordance with particular requirements. Such an appliance is most useful in the hospital ward. Messrs. Slack and Brownlow of Abbey Hey, Gorton, near Manchester, exhibited a great variety of filters for high and low pressure and for domestic and industrial purposes. The stoneware medium upon which the efficiency of this filter depends was reported upon by Dr. G. Sims Woodhead and Dr. Cartwright Wood as impervious to germs when its working was kept under proper surveillance. Messrs. J. Defries and Sons, Limited, of 146 and 147, Houndsditch, London, E.C., showed a number of interesting hygienic appliances. Amongst these were the Pasteur filters, a milk purifier, an appliance for sterilising excreta, and the equifex disinfectant appliances. An excellent series of disinfectants in the form of powders, fluids, and soaps was presented to view on the stall of Messrs. McDougall Brothers, of Manchester and 10, Mark-lane, London, E.C. Amongst other things we noticed a bacteria powder and bacteria soap known as "kudo" which contain a very effective germicide. We are glad to note that this firm guarantee the bactericidal efficiency of their disinfectant preparations. The izal disinfectants were shown in a number of forms at the stall of Messrs. Newton Chambers and Co., Limited, of Thorncliffe, near Sheffield. Izal has been shown to be a very powerful germicide, outstripping, in fact, in this regard pure carbolic acid. The Jeyes' Sanitary Compounds Co., Limited, of 64, Cannon-street, London, E.C., exhibited their well-known creolin preparations as well as their disinfectant fluids, powder, and soap. In addition to those described in this section there were a number of various disinfectant preparations shown by the firms which we mentioned last week as exhibiting drugs.

IV.—SURGICAL INSTRUMENTS AND APPLIANCES.

There was a good deal to be seen amongst the exhibits of the surgical instrument maker, including in particular some novel departures in regard to hospital outfits. The exhibit of Messrs. Down Brothers, Limited, of 21, St. Thomas's-street, London, S.E., attracted considerable attention and consisted of a very large assortment of modern surgical instruments and a complete equipment of aseptic hospital furniture. The exhibit was a somewhat comprehensive one and occupied a room to itself. Amongst other things shown was a portable wooden operating table designed by Mr. Jordan Lloyd. The assortment of instruments exhibited by the Holborn Surgical Instrument Co., of 26, Thavies Inn, Holborn-circus, London, E.C., was an up-to-date one, comprising every kind of instrument used in modern surgery. These included anæsthetic apparatus, gynæcological instruments, bone instruments, forceps, and so on. The exhibit also of Messrs. Mayer and Meltzer of 71, Great Portland-street, London, W., attracted considerable interest. It included hospital furniture, anæsthetic apparatus, and laryngological, rhinological, and aural instruments. The electric lamp especially constructed for use in the theatre, ward, and consulting room should be mentioned as being of the most convenient description for the purpose (exploring cavities, &c.) for which it is designed. Messrs. Harry W. Cox, Limited, of 9, 10, 11, Cursitor-street, Chancery-lane, London, W.C., exhibited a number of excellently designed electric appliances used in modern electro-therapy, such as x-ray apparatus and high-frequency apparatus. Messrs. Arnold and Sons of West Smithfield, London, E.C., showed a number of new surgical appliances, including some special applications of the electric light for the exploration of cavities. Wood-wool preparations were the feature of the exhibit of the Sanitary Wood-wool Co. Limited, of 26, Thavies Inn, Holborn-circus, London, E.C. This valuable antiseptic fabric has application in accouchement sheets, surgical dressings, and vaccination pads. The patent appliances for the lame and the new support for flat-foot of the O'Connor Extension Co. of 2, Bloomsbury-street, London, W.C., are well and favourably known. The exhibit showed, moreover, that some new additions have been made in regard to improved appliances for accommodating weak or deformed feet. The Liverpool Lint Co. of Mark-street Mills, Netherfield-road North, Liverpool, exhibited a variety of wools and lints for surgical use. Attention should be directed in particular to the "impermiette" bed-sheeting, which may be washed with boiling soap-and-water and sterilised without injury. "Impermiette" is also described as a new substitute for jaconet. Messrs. George Gale and Sons, Limited, of Dominion Works, Birmingham, exhibited various forms of the Lawson Tait bedsteads which are well adapted for use in hospitals. Electro-therapeutic apparatus was shown by the Sanitas Electrical Company of 7A, Soho-square, London, W. Amongst these may be mentioned the latest appliances for the treatment of disease by light, by galvanism, and by high-frequency currents. Besides the Dowsing Radiant Heat and Light apparatus for the treatment of rheumatism and other diseases, the company of that name of 24, Budge-row, Cannon-street, London, E.C., exhibited also the Scholder arthromotor, which is an ingeniously designed machine for applying mechano-therapeutical and orthopædic treatment. Apparatus for electrical treatment was also exhibited by the Electro-Neurotone Company, Limited, of 26, Old Bond-street, London, W., while Messrs. Smith and Wade of 20, Baker-street, London, W., showed the Wagner mica plate static machine which produces a current in an easy and convenient way that is especially adapted for the therapeutical application of electricity, as in x-ray or high-frequency work, and the production of ultra-violet light. The same firm exhibited a multi-nebuliser for producing exceedingly fine sprays. The Longford Wire Co., of Warrington, exhibited a number of bedsteads adapted for hospital use fitted with Wood's patent wire mattress. Close by Messrs. C. Bellack and Co., of 12, March Arch, London, W., demonstrated vibration treatment by means of the Muschik vibrator. Mr. G. H. Zeal, of 82, Turnmill-street, London, E.C., exhibited an admirable assortment of clinical thermometers, all designed to facilitate accuracy of observation. The "repello" thermometer has already been described in THE LANCET. The column of mercury, after an observation has been made, is brought back to its original level by simply pressing a flattened bulb at the top of the instrument. Mr. N. Bletchly, of 89, Northgate-street, Gloucester, exhibited various designs of boots for abnormal conditions of the foot. These included extension boots and shoes for shortened feet and legs, and for contracted heels, for club-foot and other deformities, as well as for gouty and rheumatic feet

V.—MINERAL WATERS, BEVERAGES, &c.

Natural mineral waters were somewhat in evidence this year, artificial waters being quite the exception. Wales itself of course has several excellent mineral springs and amongst these is the remarkable sulphur water of Llanwrtyd. The supply of water at this spa and health resort is abundant, whilst the amount of sulphuretted hydrogen contained in it exceeds any other water in Great Britain. Specimens of the water in bottles were shown by the proprietors of the Dolecoed Spa, Llanwrtyd, Wales. A stall was devoted also to the exhibition of pictorial representations of the balneological practices carried out at the "Borough of Royal Leamington Spa." The authorities have spared no detail to make the royal pump-room and bathing establishment equal in equipment socially as well as balneologically to continental health resorts. In a similar way photographs were shown of the important developments which have taken place at Harrogate during recent years. Specimens of the various mineral waters were shown. The Apollinaris Co., Limited, of 4, Stratford-place, Oxford-street, London, W., besides Apollinaris water, exhibited specimens of the natural bitter water apenta, which is rich in the sulphates of magnesium and sodium. In addition to these natural mineral waters, the latter for medicinal purposes and the former an excellent adjunct for the table, specimens of the natural mineral water from the Johannis spring were exhibited. This water may be had also containing a definite added quantity of lithia or of potash. Arabella, Limited, of 2A, Hay-hill, Berkeley-square, London, W., exhibited specimens of a natural mineral water belonging to the sulphated class. We have recently examined this water in THE LANCET laboratory and the results show that it contains the sulphates of soda and magnesia in desirable amount and ratio. A curious point about this water is that in spite of its wealth of purgative salines it is not excessively bitter to the taste. An excellent series of artificially aerated waters was shown by Camwal, Limited, Camwal Works, Bristol. Illustrations were given of the methods adopted for insuring the purity and strength of the waters manufactured by this association.

VI.—PUBLICATIONS.

Publishers would appear to take continued interest in the exhibition and to regard it as a means of bringing modern publications to the notice of the profession. Amongst those who exhibited publications were Mr. Alfred R. Way of Swansea on behalf of Messrs. Cassell and Co., Limited, La Belle Sauvage, London, E.C.; Messrs. E. and J. Griffiths of High-street, Swansea on behalf of Messrs. Macmillan and Co., London, and Messrs. Baillière, Tindall, and Cox of 8, Henrietta-street, Covent Garden, London, W.C.; Mr. H. K. Lewis of 136, Gower-street, London, W.C.; Messrs. W. B. Saunders and Co. of 9, Henrietta-street, Covent Garden, London, W.C.; and Messrs. Rebman, Limited of 129, Shaftesbury-avenue, Cambridge-circus, London, W.C.

VII.—MISCELLANEOUS.

Amongst the few exhibits of a miscellaneous character there was hardly one of strictly medical interest. In former years we have had occasion to describe under this heading a number of exhibits comprising motor-cars, carriages, and other objects of interest to medical men. The miscellaneous exhibits this year were, as far as we could see, of little medical interest at all and in some cases they were not in keeping with the general character of the museum.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

AT a meeting of the council of the Metropolitan Hospital Sunday Fund which was held at the Mansion House on July 30th the report of the committee of distribution was passed, the payment of awards to hospitals and dispensaries was ordered, and an addition was made to the laws of the constitution. The report stated that

The committee of distribution recommends awards to 209 institutions. The amount of collections, including interest from the Court of Chancery, to the present time is £80,800. The distribution of £58,396 11*s.* 8*d.* to 154 hospitals and to 56 dispensaries is recommended. This year 211 institutions, or seven more than last year, have made applications for grants from the funds. The committee is unable to recommend a grant this year to one hospital and one hospital was considered ineligible. In accordance with the resolution passed at the annual general meeting of constituents held at the Mansion House on Dec. 9th, 1902, the distribution committee has not included the outlay on repairs and improvements of buildings in arriving at the financial basis of each institution, so that the annual distribution will be wholly awarded for the "maintenance" of patients. The special attention of the committee of distribution has been directed to the constantly increasing expenditure of hospitals in the maintenance of patients. The average cost per week of each patient treated at 21 of the principal hospitals amounted to £1 16*s.* 6½*d.* in 1902. In 1897 the average was £1 15*s.* 1½*d.* In 1884 the average was £1 12*s.* 3*d.* Although at first sight the difference of 4*s.* 3½*d.* per week per occupied bed in these 21 hospitals does not seem very great, nevertheless it represents in these hospitals alone an increase of over £44,000 for a single year, basing this calculation on the number of beds occupied in the hospitals in question during the year 1902. In 1902 the cost per occupied bed per week varied between £1 1*s.* 3*d.* and £2 18*s.* 5*d.* in the hospitals referred to. While recognising the fact that the expense must necessarily have increased to some extent with the progress of scientific treatment and nursing the committee still thinks that the expense in some hospitals is higher than justified by these considerations. The committee has reduced the bases of award in 38 cases. Eleven deputations have attended the committee and after hearing their cases the final awards were determined. Their Majesties King Edward VII. and Queen Alexandra attended the Hospital Sunday service at St. Paul's Cathedral on Sunday afternoon, June 7th, on the understanding that the collections in the Cathedral on that Sunday would be for the "Metropolitan hospitals." It is satisfactory to state that the collections amounted to £5500. Mr. George Herring has again most liberally offered to give one-fourth to the amount collected in places of worship. The very inclement state of the weather on Hospital Sunday, June 14th, must have prevented many people from attending the services on that day, but it is gratifying to note that the amount so nearly approaches the collection of 1902 (Coronation year)—the record year of the Fund.

In the absence of the Lord Mayor Sir SYDNEY WATERLOW, Vice-President of the Fund, took the chair and in moving the adoption of the report said that since the year 1872, when the Fund was founded, £1,239,933 had been collected and distributed. He thought that he was therefore justified in saying that the Fund was a success. The collection this year had been very satisfactory and he did not think that of all the 31 reports which he had had the pleasure of submitting to the council there had been one more satisfactory than that of 1903. More money had been collected in the churches and there was still more money to come in before the financial year closed. The collection had been increased in consequence of the attendance of the King and Queen at St. Paul's Cathedral and the confidence which His Majesty had in the administration of the Fund was shown by the fact that he had expressed his desire that the result of the offertory at St. Paul's Cathedral—namely, £5500—should be paid to the treasury of the Fund. This year there had been an increase in the number of contributing congregations. Collections were made at more than 200 places of worship and this showed, he thought, that the Fund rested on a solid basis which was never likely to be changed. He wished particularly to refer to the paragraph in the report which stated that the special attention of the committee of distribution had been directed to the constantly increasing expenditure of hospitals in the maintenance of patients. All the committee could do was to report on the matter and to leave it for consideration. It was difficult to determine the cost of out-patients, but it was desirable to have a conference of those interested in hospitals to consider the best method of arriving at some conclusion with regard to the matter, as the question materially affected estimates as to the cost of in-patients. He thought that the governors of hospitals should take into consideration the details of the cost per bed and see what a large sum could be saved if they could make a reduction of 1*s.* in the expenses of each bed. In conclusion, he remarked that Mr. George Herring, to whom they could never be too grateful, last year gave £11,575 towards the Fund and this year his contribution would be £11,600.

Prebendary RIDGEWAY, who seconded the adoption of the report, said that the churches which suffered least in regard to the falling-off of collections owing to the inclement weather on Hospital Sunday were those whose ministers took the trouble to bring the matter before their congregations prior to the date of the collection. At his church about £100 were lost owing to people who were not in church on account of the weather, but that deficit was more than made up by those who had had their attention called to Hospital Sunday beforehand. He therefore urged the importance of the clergy and ministers in all places of worship communicating with their congregations before the actual day of collection arrived.

Sir HENRY BURDETT drew attention to some of the figures in the report and said that he would like to know how the extra money had been distributed. As far as he could see it had not gone to dispensaries which were the oldest form of out-patient work and the most economical system of relief. Patients, too, were attended in their own homes and the members of the dispensary staff who might report sanitary defects to the health authorities thus became excellent hygienic ministers. Good was thus done quite apart from medical relief. He felt that the Fund had not done enough for the dispensaries.

Sir SYDNEY WATERLOW said that no one could appreciate more than he did the work of the dispensaries and he should be glad if the committee could be authorised to deal more liberally with them, but the public subscribed to the Fund with the idea in their mind that the money which they gave would be given to hospitals.

Sir EDMUND HAY CURRIE explained that the extra money had been given to those hospitals which were found to be the most economically conducted. Where the management of a hospital was not economical the basis of award was reduced and this had been done in 38 cases.

The report was then adopted.

On the motion of Archdeacon SINCLAIR, seconded by Mr. F. N. NORMAN, it was decided to add to Law IX. of the constitution, which reads—

In the event of a congregational collection made on Hospital Sunday being given to a particular hospital, dispensary, or institution instead of being sent to the general fund the amount so sent shall be deducted from the grant made to that hospital, &c., and can in no case be included as forming part of the Fund—

The following:—

In the further event of a particular hospital, dispensary, or institution fixing any day or days *in the week immediately preceding Hospital Sunday* in any year for the purpose of pressing the claims of such institution upon the public it shall be an instruction to the committee of distribution when determining the award to such institution to take into consideration the amount received from such an appeal and the loss, if any, resulting therefrom to this Fund.

Sir STEPHEN MACKENZIE, Sir SYDNEY WATERLOW, and Sir HENRY BURDETT took part in the discussion.

Mr. C. E. TRITTON, M.P., moved a vote of thanks to Mr. George Herring "for his generous and continued interest in the Fund." This was seconded by the Rev. E. H. PEARCE and carried with acclamation.

Votes of thanks were also passed to Sir Sydney Waterlow (chairman) and other members of the distribution committee, to the editors of newspapers, and to the Lord Mayor, who as president and treasurer of the Fund has devoted his valuable time to, and used his influence in the well-being of, the Fund.

THE LANCET.

LONDON: SATURDAY, AUGUST 8, 1903.

The Use of the Roentgen Rays in the Diagnosis of Pulmonary Disease.

THE accidental discovery of the x rays by Professor W. K. ROENTGEN of Würzburg towards the end of the year 1895 was soon followed by their application to medical and surgical uses in the diagnosis of injury and disease. The great advances which have been made in the production of these rays and their utilisation, more especially by the discovery of their action on a fluorescent screen composed of a layer of such a substance as barium platino-cyanide, have widened their sphere of usefulness to include not only diagnosis but also prognosis and treatment.

As early as 1896 Professor BOUCHARD applied them to the diagnosis of pulmonary disease and his observations have been confirmed and extended by a number of other observers, including Dr. HUGH WALSHAM in this country and Dr. F. H. WILLIAMS in America. In recent issues we have published two papers on this subject. The first of these is by Dr. J. F. HALLS DALLY[1] and comprises an account of the appearances of the normal chest and a critical study of the variations induced by pulmonary diseases. The second, by Dr. DAVID LAWSON and Mr. R. HILL CROMBIE,[2] contains brief accounts of cases illustrating the use of the Roentgen rays in diagnosis, with reproductions of the radiographs or skiagrams obtained from them. Both these papers, affording as they do a useful *résumé* of the present methods of x-ray investigation in pulmonary disease, are of considerable interest and are obviously the outcome of a large practical experience of the subject. As in other departments of their use, the Roentgen rays can be utilised for diagnostic purposes in two ways: firstly, the so-called screen methods or radioscopic investigation, utilising the fluorescent properties of barium platino-cyanide under the influence of the rays, either in a dark room or by means of a specially contrived apparatus—the fluoroscope. The other method is the radiographic, in which the rays act upon a sensitive plate and a radiogram or skiagram is obtained on development and printing from the resulting negative. Comparing the value of the two methods most observers regard the radioscopic investigation as the more useful, since it is more rapid, more easy of application, and also allows the movements of the heart and the diaphragm to be directly observed, while in radiographic work, although a permanent record is obtained, yet if the exposure is at all prolonged some of the shadows which can be seen with the screen may be obliterated on the plate and are therefore not visible, and Dr. WILLIAMS in his book, "The Roentgen Rays in Medicine and Surgery," states that the record of some intrathoracic conditions by radiography, for example certain rapidly expansile aneurysms, cannot be hoped for until the instantaneous photography of the thorax is an accomplished fact. Dr. HALLS DALLY suggests a new nomenclature and draws a parallel between the results of x-ray investigation and the ordinary methods of physical examination; thus he would substitute the word "transradiancy" for translucency and this would correspond to normal resonance in percussion, brightness to hyper-resonance, faint shadow to impaired resonance, dense shadow to dulness, and opacity to absolute dulness. There are, however, certain shadows and lighter areas in the normal thorax of which cognisance must be taken and some of these are as yet imperfectly understood; thus in addition to the shadows produced by the ribs, the clavicles, and the scapulæ, and the well-known shadow of the heart and mediastinum, there are some faint and ill-defined streaks which Dr. HALLS DALLY calls the "pleuro-pericardial lines" and which he attributes to the junction of the parietal pleura with the mediastinum, while Dr. LAWSON and Mr. CROMBIE, adopting a suggestion of Professor D. J. CUNNINGHAM, regard them as due to the puckering of the outer edge of the pericardium during systole. The movements of the diaphragm can be observed by the radioscopic method and afford perhaps the most valuable information in the diagnosis of pulmonary disease by this means. Taking the average of a large number of normal cases Dr. HALLS DALLY finds that in quiet respiration the diaphragm moves half an inch on each side, but in maximum respiration the right side moves $2\frac{1}{2}$ inches and the left side $2\frac{3}{4}$ inches, apparently without the flattening which is usually described but with a bodily movement downwards called by Dr. WALSHAM "the piston movement."

So much for the normal appearances. In disease the chief departures from these, as might be expected, consist in the occurrence of shadows more or less dense where "transradiancy" or translucency should be observed, in diminished or altered movement of the diaphragm on one or both sides, and in alterations in the bony framework and its movements. It is claimed that the Roentgen rays may be of great use in the diagnosis of pulmonary tuberculosis, pneumonia, pleurisy with effusion, serous or purulent, gangrene of the lung, emphysema, and pneumothorax, but it is practically only in early pulmonary tuberculosis that the method at present seems likely to offer any information commensurate with the work entailed by its application. From the accounts published, not only in the two papers already referred to, but also by Dr. WILLIAMS in his book and by Dr. BONNET-LYON of Paris, it would seem that a lesion in the lung giving rise to no physical signs or only at most to some slight departure from the normal may yet give definite evidence of its presence by a diminished movement of the diaphragm or by some faint shadow at the site of the deposit, the former being the earlier, and according to the advocates of this method the earliest sign yet obtainable, and Dr. HALLS DALLY in his summary concludes that the Roentgen rays form an important adjunct to the other methods of physical examination and that by their means pulmonary tuberculosis can be diagnosed at an earlier stage than by any other means at our disposal. At the first part of these conclusions probably few would be disposed to cavil,

[1] THE LANCET, June 27th, 1903, p. 1801.
[2] THE LANCET, July 25th, 1903, p. 212.

but, after all, the ultimate test of the tuberculous nature of a pulmonary disease, as DR. HALLS DALLY himself admits, can only be the discovery of the tubercle bacilli in the sputum, and although the early diagnosis of tuberculosis is a most important matter, and although the rays may render the inference of tuberculous deposit probable at an earlier period than other methods and so enable valuable time to be gained, yet even the rays in such early stages give no absolutely unequivocal indication. In other words, x-ray investigation, at present in an experimental stage, is a useful addition to other methods, more especially as an appeal in the case of certain difficult and doubtful cases, but that it can take a place as a routine procedure of examination of the chest is hardly possible at present. That it may do so when methods and apparatus are simplified is more than probable. In any case the study of the method, of its uses and its limitations, as in the two articles mentioned, is on all grounds to be commended.

The Home Secretary and the So-called Anti-Vivisection Movement.

THE plain and well-worded rebuke recently administered by the Home Secretary, Mr. AKERS-DOUGLAS, to a deputation which came before him to protest against the increase of vivisection will be read with satisfaction by all who can take an unprejudiced view of the aims and methods of scientific progress. The deputation represented the Parliamentary Association of the British Union for the Abolition of Vivisection, and its objects were to ask for the total abolition of vivisection and to demonstrate the uselessness of looking for any genuine advance of medical science by vivisection. The first of these we imagine to be much easier of attainment than the second; anybody can ask for the moon, but not everybody can prove that the moon is made of cheese. It will be no light task for the Parliamentary Association of the British Union for the Abolition of Vivisection, or for any other body even with a longer title, to demonstrate the necessary futility of all experimental work on the lower animals; but it is fairly easy to show by internal evidence that no member of such a body will ever believe in a scientific advance made by steps which run contrary to the particular fads which govern his judgment. Anti-vivisectionists, as most other people of extreme views on one issue, are singularly blind to demonstrations of fact or to arguments of reason. Their gaze is fixed with such an intentness upon the one ideal that no rays of truth from surrounding objects or circumstances can reach the retina of their judgment. Their vision has no periphery at all. It is useless to argue with such that a man may be a physiologist and still retain the ordinary feelings of a human being towards the lower animals. They know better and will cruelly libel a number of educated men in support of their creed and in proof of the fine quality of their mercifulness.

A better instance of the singular way in which the judgment can be warped by violent opinions could hardly be forthcoming than that furnished by some remarks made by one of the speakers in the course of the interview between the deputation and Mr. AKERS-DOUGLAS. Sir JOHN ROLLESTON appears to have stated that "they had it on the highest authority that experiments on animals were useless to determine or direct the medical treatment of man and were generally misleading. It had been admitted by Sir FREDERICK TREVES that his experiments on animals had not been of service, for when he went out to South Africa and operated upon the soldiers the results obtained were quite different." What Sir JOHN ROLLESTON was driving at in this observation it is impossible to guess, but the juxtaposition has an almost childish quaintness. It would be nearly as sensible to say that the British soldier does not believe in roast beef since the war in South Africa because he found that his appetite was quite differently appeased there by rations of biltong. Sir FREDERICK TREVES has decisively rebutted the insinuation that he is opposed to vivisection, while another contention raised by the deputation also met with well-earned contradiction from the Home Secretary. The deputation pleaded for increase of inspectors under the Act and declared that at present inspectors are appointed by approved vivisectionists naturally inclined towards vivisection. Mr. AKERS-DOUGLAS contradicted this statement and showed that the inspectors are appointed by the Secretary of State and asserted that it was "not his practice, nor was it the practice of his predecessors, to go entirely into the ranks of one party or of the other for the election of inspectors." It must also be pointed out to the Parliamentary Association of the British Union for the Abolition of Vivisection that the Home Secretary's choice of individuals to serve as inspectors is somewhat limited when he has to look round for representatives of the antivivisection school of thought. The opponents to scientific progress are not important people numerically or intellectually, and do not offer, therefore, among their *personnel* much opportunity for the selection of inspectors under an Act of Parliament.

The deputation seems to have made but a slender effort in the only direction in which success would have been of any importance to their cause. They failed signally to show in any impressive way whatever that vivisection is of no use or that there is other good cause for its total abolition. That there is a certain mass of sentimental opposition to the practice of vivisection the deputation did, indeed, bear evidence. But evidence to this effect was not required. We are all aware of this sentimental opposition, and we are all in sympathy with it so far as it represents the humane desire to avoid cruelty towards the lower animals. Mr. AKERS-DOUGLAS'S reply was a model of reasonable support of scientific freedom, and furnished complete evidence that the Home Secretary is alive to those truths which so entirely escape the grasp of the anti-vivisectionist. He would, he said, neither introduce a Bill for the abolition of vivisection nor advise the Government to do so nor vote for such a Bill were it brought before Parliament. He maintained that the class of physiological and pathological work known as vivisection is an important aid to medical science and said that "however much they all disliked the incidental suffering which might follow experiments the result is justified in the well-being of the country at large." We

trust that the reception of this deputation by Mr. AKERS-DOUGLAS may lead some of the sentimental upholders of antivivisection to consider the situation a little and to ask themselves whether all the wisdom and humanity in the country are confined to their own clique.

The King's Visit to Ireland.

THE KING'S tour through Ireland, from his entrance at Kingstown on July 21st to his departure from Cork on August 1st, was a triumphant success. All who came into intimate contact with the KING were charmed with his geniality and courtesy of manner. His kindly smile and gracious demeanour put everyone at his ease. Over and over again EDWARD the SEVENTH showed himself to be gifted with the utmost tact and with the most human sympathies. The QUEEN, who is such a universal favourite, won the hearts of the Irish by her grace, beauty, and kindly interest in suffering and poverty. The social and political bearings of this tour concern us in THE LANCET to this extent, that as good citizens we desire earnestly to see peace and prosperity prevail in these islands, and we join with His Majesty in hoping that a brighter day is dawning upon Ireland. We feel with him, as he so admirably expresses it in his address "to my Irish people," that the realisation of this day will depend largely "upon the steady development of self-reliance and coöperation, upon better and more practical education, upon the growth of industrial and commercial enterprise, and upon that increase of mutual toleration and respect which the responsibility my Irish people now enjoy in the public administration of their local affairs is well fitted to teach."

The medical aspects of Their Majesties' extremely busy visit to Ireland are important. The KING and QUEEN during their sojourn in Ireland made it very plain how much they are interested in hospitals and in the anxious work done by members of the medical profession. In Dublin Her Majesty went to the Hospital for the Dying, while in Belfast and in Derry the memory of gracious visits to the hospitals will long remain. In replying to the address presented to him, in opening the Royal Victoria Hospital, Belfast, His Majesty returned thanks on behalf of himself and the QUEEN for the opportunity given them of visiting the institution "which has for me a personal interest because of its association with the name of my beloved mother and after the proceedings of to-day with the memory of our ever to be lamented son." The KING and QUEEN then most carefully inspected this new hospital and no one who was present will ever forget the simple but beautiful ceremony in the women's ward when Her Majesty named it the "Clarence," in affectionate remembrance of her son. We are in a position to record that Their Majesties regard the Royal Victoria Hospital, Belfast, "as one of the finest and most up-to-date hospitals they have visited." In laying the memorial stone of the new buildings of the Derry Infirmary, the KING in reply to an address indicated very clearly his views as to the benefits of hospitals:—

> It has given the Queen and myself great pleasure to visit an institution devoted to the relief of the suffering poor of the city and county of Londonderry. I am pleased to hear that your infirmary has been productive of so much benefit in the past and that the liberality of your fellow-citizens is enabling you to meet the growing requirements of surgical and medical science. There is no field in which public generosity can effect greater good than in bringing within the reach of those unable to procure it for themselves the means which modern science affords for the alleviation of suffering and the cure of disease. I may, in conclusion, say that it always affords me great gratification to be in any way instrumental in promoting the interests of institutions like yours.

The English Royal family have been famed for their appreciation of the medical profession. KING EDWARD has in particular always shown the deepest sympathy with our calling, and his serious illnesses have intensified this feeling. During his recent visit to Ireland there were no people to whom he was more courteous than the members of the medical staff of the hospitals which he visited, while in the apportionment of honours in connexion with the Royal visit medical men have been generously treated.

If the pointed and practical observations that the KING and the QUEEN made during their visits to hospitals, and the questions which they asked, showed what a thorough and specialised knowledge they have of hospital administration another special feature of this Royal visit to Ireland must not be forgotten. We refer to the great effort made by Their Majesties to know the surroundings of the poor. Their visits to the slums of Dublin and their close inspection of the peasants of Connemara will, we are sure, be turned to practical account in suggesting measures for improving the condition of the submerged population of the country. We look with confidence to far-reaching effects from the visit of the KING and QUEEN to Ireland.

Annotations.

"Ne quid nimis."

CANCER RESEARCH.

THE first annual meeting of the general committee of the CANCER RESEARCH FUND was held on July 30th in circumstances which were decidedly encouraging to the movement. In the unavoidable absence of H.R.H. the Prince of Wales, who is President of the Fund, the Prime Minister took the chair, and in reply to a vote of thanks delivered an admirable address, showing genuine appreciation of the magnitude and the difficulties of the task which the committee is undertaking. No precisely similar research has, perhaps, ever been attempted, while the mere fact of the project being favourably regarded in the highest quarters, both social and political, shows that the public has become of late more conversant with the scientific views and possibilities of medicine. The public now recognises that important improvements are gradually being made in the diagnosis and treatment of disease and that in many directions old rules of thumb are being superseded by logical processes of therapy founded upon exhaustive methods of research. But the task that lies before the committee intrusted with the prosecution of research into the cause of cancer differs from all previous collective researches into the natural history or pathology of a disease inasmuch as its object is the solving of a problem about which nothing definite is known save that up to the present time the efforts of the foremost authorities in anatomy, histology, and micro-biology have failed to cast any light on it. Hence the appropriateness of Mr. Balfour's warning that immediate results can hardly be expected. Sir William S. Church had, indeed, already indicated as much by pointing out that the committee intended to undertake cattle-breeding on a small scale with the view of ascertaining how far

the malignant diseases of domestic animals were transmissible. The operations of the committee will therefore not be confined to a restricted area, but will cover a wide field, a distribution of work which we have already advocated [1] when commenting on the scheme whilst it was still in its initial stage. There is little room for hoping that any important addition to our present knowledge of the pathology of cancer can be made without the exercise of much patient application on the part of highly trained workers, dextrous in utilising portions of the work of their predecessors. The most important addition made of late years to the instrumental resources of the surgeon was the discovery of the x rays by Professor Roentgen in the vicinity of tubes of high vacuum traversed by a current of electricity; these vacuum tubes, however, were by no means new, they had already been used for more than 15 years by Sir William Crookes and were universally known by his name. Similarly it may be that the solution of the problem of the origin of malignant disease lies close to our hands, perhaps half-discovered. But, on the other hand, the absence of any certainty in any direction may make the process of research a very long one; all sorts of clues may have to be followed, and the experiences of numberless observers to be codified, before the right track is found. It is well that the public should understand this and lay to heart Mr. Balfour's warning against impatience. The financial position of the fund decidedly requires strengthening and the total amount—some £43,000—still wanting for the completion of the endowment ought not to be long withheld, considering that the question involved is one of extreme importance in connexion with public and individual health.

RADIO-ACTIVE ATMOSPHERIC AIR.

RADIO-ACTIVITY would appear to be a universal property. Recent researches have at any rate shown that radio-active emanations exist in the atmosphere and that their source is probably the soil. The air abstracted by simple suction from the soil is found to be charged with active emanations, and similarly the air of cellars and underground places exhibits this remarkable property. Yet another interesting example is that of the natural carbonic acid gas which is evolved in districts along the Rhine which shows marked radio-activity, but some days after its liberation from the earth the gas becomes inactive and behaves like artificial carbon dioxide generated from carbonates by the addition of acids. It is well known, again, that the gases evolved in the thermal waters of Bath contain an important quantity of helium, and Professor Dewar is employing these waters as a source of this mysterious element for experimental work. It would be interesting to determine whether the gases evolved from the thermal springs of Bath are radio-active. In all probability they are. That being so, has helium anything to do with the phenomenon? Quite recently Sir William Huggins and his gifted wife Lady Huggins proved, by examining spectroscopically the light emitted directly by a radium salt at ordinary temperatures, that many of the lines coincided with the spectrum of helium. Again, Professor Rutherford obtained evidence in favour of the view that in the very slow break up of radium helium appears to be one of the products evolved. Still more recently Sir William Ramsay and Mr. F. Soddy succeeded in detecting helium by the spectroscope in the gases extracted from the radium salt. When Sir William Ramsay confesses that he is as much in the dark about it as anyone it is wise perhaps to wait for the results of further investigation before attempting to give any explanation of this singular phenomenon. It is, however, a very remarkable circumstance, considering the series of intricate chemical operations through which radium must pass before it is isolated in a more or less perfect condition, that apparently it should generate helium in some inexplicable way. The fact remains that there is a continuous production of helium from radium. It would be comparatively easy therefore to account for the air showing in general radio-active properties since the property is, so to speak, easily infectious. There are immense stores of radio-active material in the earth and in fact the whole globe is probably a radio-active sphere. The fact that natural gases escaping from the earth show a marked degree of radio-activity might be useful perhaps in differentiating natural from artificial aerated waters. Different meteorological conditions appear to determine different degrees of radio-activity of the air. Thus considerable activity is excited during fog, while in cold, frosty weather the activity of the air is very high. Again, the direction of the wind influences the radio-activity of the air. With the wind in the south and east the activity is about the same; with the wind in the north and west the activity is much lower. A fall of the barometer leads to increased activity probably because radio-active air is withdrawn from the soil owing to the reduced pressure. Altogether, it would appear that the discovery of this remarkable property of radio-activity presents a vast field for exploration. We ventured to think some years ago that such would be the case as soon as sufficient radio-active material could be isolated. The discovery of the properties of radium and helium promise to lift the great veil of nature high indeed, and the patient, laborious scientific research which has led to this result must not be forgotten.

[1] THE LANCET, Sept. 6th, 1902, p. 684.

THE ARMY ESTIMATES.

THE recent discussion of the Army Estimates in the House of Commons possessed many points of medical interest. Taking it altogether Mr. Brodrick has been subjected to a long and trying ordeal of criticism of all sorts during his term of office, and he must have hailed the wholesale diversion of public attention to the tariff question with no little relief and satisfaction. Touching the subject of the soldiers' rations we consider that what Lord Stanley and Mr. Brodrick had to say seemed to be weak and inconclusive. It was alleged, and the allegation was not denied, that the recruit under training was not as well fed as the soldier when trained. Seeing that army recruits are young, immature, and growing lads and that they have as a rule been underfed previously to enlistment and possess keen appetites, we should have thought that if anything they required to be better, and not less well, fed than trained soldiers. That would seem to us to be the conclusion to be derived from physiological considerations and to be also entirely in accordance with ordinary experience. It is scarcely to be expected that a recruit will expend his daily pay in order to supplement his rations, or that, if ready to do this, the food so purchased will be of the most suitable and substantial kind. We have no doubt that, personally speaking, the War Minister is really of opinion that the recruit should not be stinted in regard to his supply of nourishing food, and that the State ought to furnish the young soldier with all he needs. But there at once arises the question of expense which would be considerable. It would nevertheless repay the State to incur the cost in the interest of the army and of all concerned. We are ready to hope and believe that, speaking generally as regards the soldier's accommodation and personal hygiene and comfort, considerable progress has taken, and is still taking, place. Mr. Bardett-Coutts in reference to the vote of £530,000 for the medical establishment, spoke about the reforms and changes which had been introduced in regard to the medical department, and commended the association of the civilian with

the military element on the Advisory Board as a wise principle. But he thought that the relations of the two elements might be more clearly defined with the view of facilitating administration and avoiding friction. He likewise called attention to the very inadequate allowance made to the civil medical members on the Board. Mr. Brodrick's speech on the occasion in question will, we think, be generally regarded as satisfactory. It was, as is usual with Mr. Brodrick, optimistic in tone. He stated that at the last examination there were 72 candidates for 30 vacancies, some of the candidates having held places as house surgeons in the best hospitals in London. He fully recognised the services which Mr. Burdett-Coutts had rendered, eulogised the medical profession for the great and generous aid which he had received from several of its most eminent members, and dwelt upon the numerous beneficial changes which had already taken place in various directions and on others which are, he said, forthcoming. We hope that Mr. Brodrick's sanguine views will have quick justification.

HOUR-GLASS STOMACH.

ONE of the most important results of the healing of a gastric ulcer is the narrowing of the lumen to which it gives rise. Should this occur at the pyloric opening a general dilatation of the stomach will result; if, however, the contraction is nearer the middle of the viscus an "hour glass" stomach will be formed, the stomach consisting of two cavities communicating with one another by a narrow orifice. This leads to a most troublesome form of dyspepsia hardly remediable by any medicinal or dietetic treatment, but surgery, by making a free communication between the two loculi of the stomach, usually succeeds in removing completely all the symptoms. The condition is so well recognised now that it is often possible to diagnose it before operation. In the present number of THE LANCET we publish a case which was under the care of Mr. B. G. A. Moynihan in the Leeds General Infirmary. The diagnosis of hour-glass stomach was definitely made and when the abdomen was opened this condition was found, but further examination revealed that the stomach was constricted in two places, a triloculated or trifid stomach being formed. Operation completely relieved the patient. The rarity of the case is great and it is, we believe, the first case of trifid stomach on which an operation has been performed. It demonstrates clearly the great importance of examining the whole stomach in such cases, for if the third pouch had not been found the operation would have failed to relieve the patient. We congratulate Mr. Moynihan on this very interesting and satisfactory case.

THE HEALTH OF THE HOLDERS OF LONDON COUNTY COUNCIL SCHOLARSHIPS.

THE brief reports which have been drawn up by Dr. L. C. Thorne Thorne and Dr. F. May Dickinson Berry on the physical condition of the holders of London County Council scholarships for the past years provide a satisfactory record and much interesting information. It is instructive to note that the physical development of these clever children, both boys and girls, is distinctly above the average as measured by the standard of height and by the standard of chest measurement. The analysis of the physical examination of training college scholars (boys) is decidedly superior to that of the junior and intermediate scholars, while as regards the examination of the girls the most noteworthy point is the number of cases which display weakness of the muscles of the back with a tendency to lateral curvature This latter abnormality has led to the suggestion on the part of Dr. Berry that more ought to be done for girls in elementary schools to develop the muscles of the back by physical exercises and gymnastics. The fact that so large a number of these intellectually superior children should give evidence of albuminuria is a point which requires explanation—15 per cent. of the junior scholars (boys) had albumin in the urine, while of the intermediate and commercial scholars 25 per cent. showed the same pathological condition. In the case of girls the juniors showed about the same percentage of cases of albuminuria, while the intermediate scholars were only affected to the extent of about 14 per cent. Dr. Berry apparently regards a slight degree of albuminuria as a matter of no great importance. The clinical significance of so-called physiological, cyclic, or intermittent albuminuria in children is little understood. It appears, however, to be more common among those of precocious mental development and those generally of a nervous temperament. The subsequent history of the subjects of examination should not be difficult to follow and it would be most interesting and instructive to learn whether the independent appearance of albumin in the urine of children apart from symptoms of organic disease of the kidneys is a precursor of more serious disease at a later period of life. Several cases of stammering, both in girls and in boys, are recorded and the number of children who have been found to be suffering from defective hearing, defective eyesight, and adenoid growths in the naso-pharynx is suggestive that even among the superior classes of schoolboy, from which most of these scholars are drawn, there is great need to have these conditions treated at an early age, when there are reasonable prospects of preventing serious and permanent damage.

THE MOTOR-CAR BILL.

THE Motor-car Bill was read in the House of Commons on the night of August 4th for the second time, but only after Mr. Long had consented to introduce a clause providing for a speed limit. The question of what "speed limit" is to mean is to be left to the Committee stage, but it has been indicated that there will be two penalties under the Bill. The one will be for driving at a speed exceeding the maximum allowed and the other for driving at such a speed as to be dangerous to the public. The latter offence may be punished by imprisonment but the former will be met with a fine, and we hope that the fines will be heavy, especially where any attempt to resist authority is shown. What, for instance, is the use of fining the owner of Holland House a few pounds? As to speed, our own opinion is generally in conformity with that expressed by Sir Philip Muntz—namely, that no motor-car should be allowed to travel at a faster rate than first-class horse traffic, and we think that this is a view that will be very generally shared by the medical profession—a class in whose hands the motor-car, rightly used, may be a real blessing to rural communities. Our present highways were laid out for horse traffic, and in the palmy days of coaching the best coaches travelled at a rate of ten miles per hour including stoppages. If a motor-car goes faster than 15 or 18 miles per hour the road is being used, very generally, for a purpose which its angles and gradients and breadth do not suit. Moreover, it is not merely danger to traffic, both pedestrian and vehicular, which motor-cars bring about; they cut up the surface of the roads, while the annoyance, to use no stronger term, caused by the dust, the smell, and the noise make many a country residence, the grounds of which border on a highway, perfectly uninhabitable. Here it is the heavy car designed to go at a furious pace, and generally going it, which does the harm, especially when driven by that class of motorist whom Sir Fortescue Flannery designated in the House of Commons, with most happy phrasing and legitimate loathing, as a "road hog." The

motor-car of proper construction for the roads and driven by competent and respectable persons, ought to be a source of benefit to many members of the community, but it must be used in such a manner as not to interfere with the enjoyment of the roads, so as not to destroy property, and, above all things, so as not to endanger life. We hope that the Government will be able to frame and to pass a measure securing these things.

THE METROPOLITAN HOSPITAL SUNDAY FUND AND THE APPEALS OF HOSPITALS TO THE PUBLIC.

A MEETING of the Metropolitan Hospital Sunday Fund was held at the Mansion House on July 30th (see p. 410 of this issue) when an addition was made to Law IX. of the constitution which appears to us to be of considerable significance. The new article of the constitution empowers the committee of distribution, when determining awards to institutions that have made appeals to the public immediately preceding Hospital Sunday, to take into consideration the amount received from such appeals and the loss, if any, which the Fund may have thereby sustained. Our readers will remember that appeals were made on behalf of certain hospitals this year in the weeks immediately previous to Hospital Sunday and it is probable that the responses to these appeals to some extent stopped the flow of charity to the Fund. Again, the council of the Metropolitan Hospital Sunday Fund looks to the press for special aid during the actual week of collection and during the preceding days, but the columns of many papers had been recently filled with other appeals to the public to make gifts to certain particular institutions, with the result that these papers could not extend to the Fund the same amount of support which they have given in other years. We feel sure that the hospitals which made appeals at an unfortunate date this year will not do so again, but it is well that the committee of distribution should mark its sense of the injustice of any charity receiving at the same date a special donation from the public and a share of the general charity. The Metropolitan Hospital Sunday Fund has now been in existence for more than three decades and the middle week in June has become associated in the public mind with a collection for the Fund. If appeals are made to the public at that particular season of the year by individual hospitals confusion may arise and charity may be diverted from its intended object.

THE DISTRIBUTION OF PLAGUE.

As regards the Cape Colony the medical officer of health states that for the week ending July 11th the condition of the various places mentioned below was as follows. At Port Elizabeth 2 cases of plague were discovered during the week—namely, 1 native male (found dead) on July 7th and 1 coloured male on the 11th. At the Plague Hospital 1 coloured male was discharged during the week, leaving 6 cases under treatment. Plague-infected rats continued to be found in the town. At East London 1 case of plague was discovered—namely, a native female (found dead) on July 5th. At the Plague Hospital 1 native male was discharged during the week, leaving 4 cases under treatment. At King William's Town no case of plague was discovered. At the Plague Hospital 1 European male and 1 coloured male were discharged, leaving 3 cases under treatment. Plague-infected rats continued to be found in the town. Neither at Graaff-Reinet nor at Burghersdorp was any case of plague in man or in rodents discovered during the week. At Queenstown 3 cases of plague were discovered—namely, 1 native female on July 5th who died on the following day, 1 native female (found dead) on the 6th, and 1 native male (found dead) on the 7th. No patients were under treatment in the Plague Hospital. Neither at Stockenstroom not at Riversdale was any case of plague in man or in animal discovered during the week. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on July 31st states that for the week ending July 30th there were 12 cases of plague and 8 deaths from the disease. In Hong-Kong, a telegram from the Governor received at the Colonial Office on July 27th states that for the week ending July 25th there were 13 cases of plague and 11 deaths from the disease.

CADGE OF NORWICH.

A MOVEMENT has been set on foot to perpetuate the memory of the late Mr. William Cadge of Norwich in some permanent form. Accordingly, at a meeting held on July 22nd, at the request of Mr. William H. Day, chairman of the committee, and attended by some of the professional friends of the late Mr. Cadge, it was resolved that either a memorial window or brass in the chapel of the Norfolk and Norwich Hospital would be suitable, that subscriptions should be confined to his professional brethren, and that these should be limited to one guinea. Any medical man who desires to participate in the above is requested to forward his subscription to Dr. M. Beverley, Norwich, who is the treasurer of the fund.

TUBERCULOSIS IN THE EASTERN COUNTIES IDIOT ASYLUM.

ALTHOUGH the Idiot Asylum at Colchester is not situated in exactly rural surroundings there is nothing about its exterior to suggest to the traveller on the Great Eastern Railway as he passes Colchester station that the institution is either a culture ground for the tubercle bacillus or a home for dying tuberculous patients. But the annual report for Colchester for the year 1902, which is written by Dr. Edward Chichester, who was then acting as medical officer of health, suggests that there may be something about the institution which requires investigation at the hands of a competent committee composed largely of medical men. During 1902 there were 16 deaths from tuberculosis registered in the institution. This isolated fact conveys nothing, but when it is considered in relation to the circumstance that there were only 23 deaths from all causes it is apparent that the tubercle bacillus was responsible for no less than 69·5 per cent. of the total. This seems to require some explanation, more particularly when it appears that the total population of the asylum is only about 300. If this number really represents the total population for the year we have 16 deaths from tuberculosis in an asylum population of 300, as compared with only 67 deaths from tuberculosis in the remainder of the Colchester population of some 37,000. We shall hardly be surprised to learn that the subscribers to this institution are anxious to ascertain what are the actual facts—whether, for instance, the figures are trustworthy and the inferences sound, and, if so, what steps are being taken to ascertain the cause of this excessive incidence of tuberculosis upon the inmates.

THE CHRISTIAN HOSPITAL OF CHICAGO.

THE United States is the country in which, *par excellence*, flourish diploma-selling institutions of all sorts and kinds. Many of the more notorious of these have been abolished, but there yet remain several where degrees may be bough for a pecuniary consideration. An institution has been set going recently in Chicago which embodies in its rules of membership many objectionable features. This institution is called the Christian Hospital and includes among the members of its medical and surgical staff some well-known medical

men of Chicago. The president of the staff, indeed, is a surgeon of world-wide fame. The objects which the originators of the Christian Hospital hope to attain by its establishment are set forth in the circular issued by them to the medical profession as follows. "Our certificate of membership is artistically designed and executed in the highest style of the lithographer's art, neatly framed, and hung on the walls of your reception room it imparts confidence to all visitors and patients and is a much stronger drawing card than an ordinary diploma as it indicates a higher attainment. We furnish free with each of our certificates a solid gold lapel button of special Red Cross design in enamel and the words, 'Christian Hospital, Chicago,' in circular form around the red cross; also a neat pocket membership ticket. This alone if displayed judiciously will bring more dollars annually than the cost of your membership. We will agree to pay you a cash commission of 50 per cent. of all surgical fees and 25 per cent. of all medical fees received from patients you bring or send to us. This, of course, will be held strictly private and confidential. Your professional interests as well as our own demand this." The last clause contains the essence of the whole scheme, which is to induce medical men to send patients to the institution, the bait being the promise of a division of fees. The American Medical Association at its recent meeting[1] in its new "Principles of Medical Ethics" laid special stress upon the question of division of fees and strongly deprecated the custom. In the face of this expression of opinion it is hard to see how medical men of note can lend their names to the furtherance of such an institution as the "Christian Hospital" of Chicago.

FOOD AND DRINK SWINDLES.

IT has long been known that bees exhibit a preference for genuine cane sugar and unless starving they will not touch the beet substitute at all. This fact may or may not have a physiological significance; it depends, it seems to us, upon the purity of the sugar. There is no evidence, as far as we know, that cane sugar is physiologically or dietetically superior to maple sugar. When, however, it can be shown that the sugar is impure either can obviously be injurious to health. And in this regard beet sugar is much more likely to contain injurious impurities than genuine cane sugar, for the former has to be "faked" in order that it may more closely resemble the latter. Tin salts are admittedly employed to give yellow crystals the appearance of Demerara crystals and aniline dyes are used again to correct the yellowness of the crystals and to give them the appearance of white loaf sugar. All such devices are certain to be physiologically mischievous; they are calculated to interfere with the natural condition of the sugar in which it is best suited for physiological requirements. This is typical of the frauds commonly practised in regard to articles of food and drink at the present day. "Substitution" is a very great modern evil and those who encourage this practice and thrive upon it should be punished very severely and sufficiently to act as a deterrent to the continuation of it. The creed of the substitute-monger is always that the substitute is better than the real thing; he always knows, or pretends to know, better than the public what is good for it. Glucose, he says, is better than cane sugar for making jam; it keeps better and does not crystallise. Grain spirit is more wholesome, again, he urges, than malt spirit or grape spirit. But he can never be induced to state on the label the truth about the article. If the substitute is better, as he says, and the public persists in demanding it, why does he hesitate to describe his goods as such? The fact is, the public is badly deceived by the processes of substitution which are carried out on a very large scale in reference to a very great number of articles of food and drink. The country is sadly in need of a Bill to deal effectively with misleading labels and descriptions.

[1] THE LANCET, July 4th, 1903, p. 62.

EPSOM COLLEGE: PRESENTATION TO DR. HOLMAN.

BEFORE the usual meeting of the council on August 5th the chairman, Sir Joseph Fayrer, presented to the treasurer, Dr. C. Holman, on behalf of the members, a testimonial in recognition of the great services which he has rendered to the institution for so many years, and especially as a mark of their appreciation of his efforts in connexion with the recent successful festival dinner held under the presidency of the Prince of Wales. The testimonial took the form of a large portrait, which is to hang in the council chamber of the College in Soho-square, and an illuminated address as follows:—

"To Constantine Holman, M.D., Treasurer of the Royal Medical Benevolent College.

We, your colleagues on the Council of the Royal Medical Benevolent College, desire to take the present opportunity, when we have just celebrated, under the presidency of His Royal Highness the Prince of Wales, the most successful festival dinner that the College has ever had, of expressing our sense of the great and valuable services you have rendered to the College for so many years, for 16 of which you have held the important office of treasurer.

We are sensible of the amount of time and work which have been so ungrudgingly given by you and to which the College so largely owes its present satisfactory position.

We desire to offer our thanks for all that you have done and are doing, and to express our hope that you may long be spared to us and to the College.

The address was signed by the President of the institution and by all the members of the council and incorporated in the handsome illumination were sepia views of the College at Epsom. We are confident that Dr. Holman appreciated the simple and expressive terms in which his services to the College were referred to, and no more appropriate testimonial could have been selected than a portrait to be placed amongst those in the council room of the founder, presidents, vice-presidents, and other old friends and supporters of the institution. For 25 years Dr. Holman has watched over the College as a member of the council and for 16 years he has taken a most active interest in it as treasurer, while he has been a governor since the foundation of the institution 50 years ago. Truly he has merited every word in the address.

THE STORY OF COLOTOMY.

THE evolution of an operation is often of great interest. Occasionally an operative method springs full grown from the head of its inventor and subsequent years hardly witness any modification of it, but more frequently at its first appearance an operation is somewhat crude, and time and experience shape and mould it until in its maturity it is a very different procedure from what it was at its inception. Many surgeons improve the inventor's operation, modifying the idea first put forth, and tending to make the procedure easier and safer than it was before. Sometimes a useless or even a harmful change is suggested; it is taken up, tried for a time, and not fulfilling its original promise it is dropped. The operation of colotomy has undergone many and great changes since it was first thought of. In 1710 Littré suggested a left inguinal colotomy; in 1839 Amussat devised the lumbar operation and in pre-antiseptic days this was without doubt the better operation. As modified by various surgeons it became ultimately a fairly successful operation, for if skilfully performed it avoided opening the peritoneal cavity and yet afforded free exit to the fæces above the obstruction. Littré's operation, however, had never been completely abandoned and gradually during the last 20 years it has replaced Amussat's method, until at the present time the lumbar operation is

hardly ever performed. Meanwhile, Littré's operation has been undergoing various modifications which have enhanced its value until it is now practically perfect. Mr. F. T. Paul of Liverpool, who has himself made some important improvements in the operation, took colotomy for the subject of a recent address which we print this week. His words show how success depends on attention to many small points. The discomfort due to the escape of fæces from which the patient formerly suffered no longer necessarily occurs, and if the operation has been performed for some non-malignant obstruction a man may lead a long and comfortable life even though he be the subject of a colotomy.

THE FLY PLAGUE.

THE presence of flies in the house is a reproach. It is a falling away from a high hygienic standard, for the fly is a pestilential fellow. It must be admitted, however, that it is very difficult to keep habitable places free from flies. Poisonous fly-papers are unsightly and glutinous cords and traps are not very pleasant accessories in the household. Yet it is a matter not only of comfort but also of health that the fly should be excluded. The fly may easily be a pathogenic agent owing to the fact of its choice of environment being oftentimes of the most disgu-ting character. When a fly walks across a suitable culture medium it leaves infection behind it, as shown in the colonies of organisms which develop on the points with which the insect's legs have been in contact. The fly therefore should be driven out of our haunts. Preventive measures are best and at this season of the year, when flies are beginning to infest our houses, it is an excellent precaution to cover the window openings with wire gauze. It is a curious fact that flies will not pass through netting even though the meshes be quite large unless there be a source of light as from a window behind it. Thus in rooms with windows only on one side a net over the window will absolutely keep the flies out, although the meshes of the net may be an inch apart. It is surprising that in railway carriages a sliding frame fitted with wire gauze is not provided as well as the window. Such a sliding screen could be used when ventilation is wanted, while dust and rain would be excluded at the same time. The gauze frame would certainly keep flies out. We have seen carriages on certain of the continental lines provided with a gauze-screen of this kind. There is no reason why a similar arrangement should not be fitted to the ordinary window sash. This would do much to mitigate the great nuisance of flies in the house.

THE ROYAL COMMISSION ON LONDON TRAFFIC.

THE Royal Commission on London traffic, on the successful issue of whose recommendations the improved convenience of Londoners in their daily business largely depends, has recently taken steps that augur well for its efforts. The Commissioners have shown that they hold the worthy desire of seeing with their own eyes the things in judgment upon which they sit, and that they will not be content with mere reports and accumulated evidence. On July 31st, instead of sitting at the Westminster Palace Hotel to hear evidence, the Royal Commission took the practical and laudable step of personally inspecting the condition of the roads and of the congested neighbourhoods in and around the north-west and north-east districts of London. Six motor-cars were put at the disposal of the Commissioners by the members of the Automobile Club. The route taken was the Mall, Piccadilly, and so through Hammersmith-broadway to Hammersmith Bridge. A suggestion that seems to us of much value was made by Mr. Jeffreys, the honorary secretary of the Roads Improvement Association. This is to the effect that in order to relieve the pressure of traffic in Piccadilly it would be well instead of setting back the frontage to continue Pall Mall through Green Park so as to converge on Piccadilly at the widened portion near Hyde Park Corner. The value of such a road as an alternative route to Piccadilly would obviously be great. And there should be no great difficulty in carrying out such a suggestion, although the interference which would probably be necessary with part of the courtyard of St. James's Palace or with Warwick House and the little passage into the Green Park might be regrettable from the artistic and antiquarian point of view. Unfortunately, the practical demands of progress often bring about the demolition of the old, the graceful, and the comparatively extravagant to make way for the new, the useful, and the economical. Changes of some such nature are inevitable to procure more space for the traffic which at certain seasons of the year hopelessly blocks parts of Piccadilly.

IN connexion with the Royal visit to Ireland His Majesty the King has been pleased to confer honours upon various persons notable in their several stations. Among the names of more particular interest to the medical profession are that of the President of the Royal College of Physicians of Ireland, Dr. Arthur Vernon Macan, and that of the President of the Royal College of Surgeons in Ireland, Mr. Lambert Hepenstal Ormsby. Both of these gentlemen have received the honour of knighthood.

THE death at the age of 69 years is announced of Dr. John Tatham of Burton-in-Lonsdale, and late of George-street, Hanover-square. Dr. Tatham was for many years a member of the staff of the Hospital for Consumption and Diseases of the Chest, Brompton, and at the time of his death was consulting physician to that institution. The memory of his genial shrewdness with his patients and his powers of internal organisation will long be preserved there.

LORD IVEAGH has given to the King the sum of £50,000 to be divided among the Dublin hospitals of all denominations and the National Hospital for Consumption, Newcastle, county Wicklow. The gift is a worthy commemoration of the visit of the King and Queen to Ireland.

THE death is announced at the age of 84 years of Dr. Joseph Griffiths Swayne of Bristol, author of the famous Obstetric Aphorisms. In a future issue we hope to give a more extended notice of Dr. Swayne's career.

THE CANCER RESEARCH FUND: THE FIRST ANNUAL REPORT.

A MEETING of the general committee of the Cancer Research Fund was held on the afternoon of July 30th, at the offices of the Conjoint Board, Thames Embankment, London, W.C., the Right Hon. A. J. BALFOUR, Prime Minister, being in the chair. The first annual report of the Fund was presented and showed that the Cancer Research Fund had its origin in October, 1901, when a gentleman of considerable standing and pecuniary influence in the City stated to a well-known surgeon that he believed that he could raise in the City a sum of £100,000 or £150,000 for the carrying on of a systematic investigation into the cause of malignant disease. The Royal College of Physicians of London and the Royal College of Surgeons of England were approached by the surgeon, a member of the Council of the latter body, and as a result a general committee of the two Colleges was appointed to formulate a scheme of research. After a little unavoidable delay an appeal letter was published in the *Times* of April 18th, 1902, and leading articles were written in the columns of that paper and the

medical journals advocating the scheme, which was understood from the beginning to have had Royal approval. A sum of £30,000 was quickly collected and a start was made in the investigation by the securing of a strong executive committee, the appointment of five trustees for the Fund, and the choice of Mr. Henry Morris as honorary treasurer and Mr. Frederic G. Hallett, secretary of the Conjoint Board, as secretary. Then a general superintendent, Dr. E. F. Bashford, was unanimously elected and given general control of the central laboratory of the Fund. Last autumn His Majesty the King was pleased to accord his patronage to the Fund and pathological and statistical subcommittees were appointed, while the laboratories of the Conjoint Board were placed at the disposal of Dr. Bashford by the Royal Colleges. The work of the Cancer Research Fund began immediately.

The report of the general superintendent, which, dating from November, 1902, may be said to cover little more than half a year's work, forms a clear statement of the steps which have been taken to organise a research upon as wide a basis as the funds available would allow. Extensive experimental work has not yet been undertaken, although progress has been made in studying varieties of malignant new growths in animals. Certain alleged therapeutic measures applied to cancer in man have been the object of serious attention and in particular the results of electro-therapeutics, the Finsen light, high-frequency currents, and the x rays, have been carefully examined, the medical men in charge of the electrical departments of hospitals having cordially cöoperated, while many medical men have made reports on the treatment of their cases. Work has also been directed to endeavour to establish the statistics of cancer on a secure pathological basis. An investigation and analysis have been undertaken of the records of deaths from malignant new growths in the London hospitals and the statistical committee after consideration of the results of preliminary investigation has recommended continuation of work upon these lines. Under Dr. J. F. W. Tatham's supervision certain clerks in the General Register Office are now engaged in abstracting from the registers of the last three years facts bearing on the relative incidence of fatal cancer on the more important occupations. A memorandum approved by the pathological and executive committees of the Cancer Research Fund has been printed by the Colonial Office as an official paper and issued by the Colonial Secretary to self-governing and Crown colonies along with covering despatches. The questions formulated in the memorandum are very definite ones and it is hoped that when they are answered the relations of the incidence of cancer to race and locality may be compared to some extent. An interesting financial statement by the honorary treasurer is added to the report, showing how carefully the work done has been proportional to the money received and pointing out how vitally necessary to the chances of success of the research a large increment of funds is. It was mentioned that contributions might be sent to the honorary treasurer, Cancer Research Fund, Examination Hall, Victoria Embankment, London, W.C., or to the account of the Fund, London and Westminster Bank, Marylebone Branch, Stratford-place, London, W.

Mr. BALFOUR then called upon Lord Strathcona to propose the adoption of the report.

Lord STRATHCONA, in moving the adoption of the report, directed attention to the lines laid down for work by the Fund, but said that it was too early to draw any deduction from the experimental researches, though important results were expected to follow the statistical information now being prepared on the same basis in the different parts of the world under the auspices of the Fund. There was one feature which was regrettable—namely, that the revenue derived from the Fund already subscribed was not sufficient to meet the expenditure which was necessarily being incurred, and in consequence it had been found necessary to draw upon the capital account. The fund so far subscribed was slightly under £50,000 and had been reduced by about £100 in the past year. It was most important that the amount should be made up to £100 000. Hitherto only 213 subscribers had contributed to the Fund. The report had been placed before the President of the Fund, the Prince of Wales, who had given his approval.

Mr. BALFOUR mentioned that if the Prince of Wales had been able to be present he would have taken an active part in suggesting that the report be adopted.

Mr. C W BELL seconded the motion which was carried.

Sir FREDERICK BRAMWELL moved a vote of thanks to the officers of the Fund and others who had assisted in its work during the year, and this having been seconded by Mr. HAROLD J. STILES, representing the Royal College of Surgeons of Edinburgh, was also carried.

Sir WILLIAM S. CHURCH, replying on behalf of the executive committee and the consultative staff, referred to the great difficulty which had been experienced in organising such an undertaking as that which they, the two Royal Colleges in London, were directing. At the outset two main points were considered to require immediate attention. In the first place it seemed to be essential to collect statistics in which attention had been paid not only to the diagnosis of the disease during life but also to post-mortem verification. In the second place, it was found extremely difficult to obtain a convenient locality—a few acres of land with suitable buildings, something of the nature of a small farm—for carrying on experimental work. Some of the lower animals were afflicted apparently with exactly the same forms of cancer as the human species and the object of the experimental work was to ascertain whether it was possible in them to establish a cancerous breed, whether the disease could be transmitted from parents to progeny.

Sir WILLIAM BROADBENT moved a vote of thanks to Mr. Balfour for presiding at the first annual meeting. In the course of his speech he referred to the interest which Mr. Balfour had for some years taken in the subject and said that in the medical profession more importance was attached to the prevention of the disease than to its cure. It was on these grounds that researches as to the pathological or etiological factors of the disease were felt to be so necessary.

Mr. JOHN TWEEDY seconded the motion which was carried.

Mr. BALFOUR, in the course of his reply, said that the results of modern medical and surgical treatment showed a great advance as compared with what could be accomplished by medical skill and science 100 years ago and the progress of medicine was likely to be as rapid in the future as it had been in the past. With regard to cancer, isolated endeavour had now been going on in every hospital and by every medical practitioner in every civilised country of the world for years past. What was wanted was cöoperation between all the different workers in this field—not merely coöperation among those engaged in combating to the best of their ability as practitioners the ravages of this disease but of those who, by their scientific and biological attainments, could throw some light upon the cause and origin of the disease. He noticed with much satisfaction that the scope of these researches would include the manifestations of the disease, not only in man but also in the lower animals. He believed that it would come as a surprise upon a large number even of the instructed public to know the degree to which not only mammals but even species lower in the scale of organisation suffered from a disease which in all its peculiarities seemed to be absolutely identical with that from which the human race suffered so greatly. It was probable that the wider sphere of fruitful study thus opened would contribute to the formation of some estimate of the cause and course of the disease, and some knowledge of the cause and course of the disease must after all be the basis of any reasonable attempt to find a mitigation or a cure. It was true that happy experiments, or the inspiration of some fortunate man of genius, might, in anticipation of these wider generalisations, suggest some effective remedy, but it was impossible to count upon this; and in any case the work of this fortunate genius could not fail to be aided by the generalisations to which the researches now being commenced must inevitably lead. He also sympathised with what was said by Sir William Broadbent to the effect that there was no supposed or suggested cure which the committee would regard as unworthy of investigation. The number of quack remedies, the number of perfectly futile remedies, which had from time to time been suggested, sometimes by those who were ignorant and sometimes by those who only desired to make money out of other people's ignorance, had been so great that none could wonder at the impatience with which the trained practitioner looked at most of the proposed cures; and it was to be feared that the vast majority of them would not bear any examination at all. But undoubtedly the proper spirit in which to enter into these investigations was not to reject hastily anything which has even a *primâ facie* claim to be considered. It was allowable to use hypothesis as a guide to the collection and examination of facts but not to start the

collection and investigation of facts with any hypothesis so firmly rooted in the mind as to allow it to interfere with impartiality of the judgment. He was certain that this investigation had been, and was going to be, carried out with due attention to this precaution, and he earnestly advised the public not to show impatience at the slow march of discovery upon a matter which had defied the greatest physicians of the world up to the present time. He trusted that the public would go forward in a liberal spirit, recognising that success, however certain, must be slow; not to be too impatient of results nor too anxious to receive some equivalent in discovery for every subscription that they might give to the work. He hoped that they would be anxious to endow this great machinery for scientific and pathological investigation in a way which should, by the accumulated learning and experience of years, do something to mitigate one of the greatest curses under which humanity groaned. It was, however, disquieting to find that, though the sum which had been collected appeared to be a large one, it was nevertheless contributed by only 213 persons out of a community of 40,000,000. Considering that all of these 40,000,000 had either in their own persons or in the persons of those dear to them—wives, children, grandchildren—a direct interest in the successful result of these investigations, it was surprising that the contributors should be so few in number. He hoped that when the next annual meeting took place it would be found that others had come forward and that the result of their united efforts would be the providing of an assured financial basis which would be the best guarantee of ultimate success.

Sir WILLIAM CHURCH proposed that Sir Henry Howse should be added to the general committee as, in consequence of his having vacated the office of President of the Royal College of Surgeons of England, he necessarily went off the executive committee.

This was unanimously agreed to and the proceedings then terminated.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 30th, Sir WILLIAM S. CHURCH, Bart., the President, being in the chair.

Seven gentlemen, having satisfied the Censors and given their faith to the College, were admitted Members. Licences were granted to 122 gentlemen who had satisfied the examiners and conformed to the regulations of the Conjoint Board. The Diploma in Public Health was awarded to 17 candidates on the recommendation of the examiners. George Francis Angelo Harris, M.D. Durh., elected on April 30th, was admitted to the Fellowship *in absentiâ* and the seal of the College was set to his diploma.

Communications were received from the secretary of the Royal College of Surgeons of England, reporting certain proceedings of its Council on July 9th; from the Worshipful Company of Spectacle Makers, asking the views of the College on a proposal that competency in sight-testing should in future form a subject of examination and certification for the diplomas granted by them to opticians (this was referred to the Censors for consideration and report); from the Dean of the Faculty of Medicine, University of Edinburgh, reporting the award of the Murchison scholarship, July, 1903, to Charles John Shaw, M.B. Edin.; and from Dr. Norman Moore, offering for the acceptance of the College an autotype portrait of Dr. Fitz-Patrick.

The election of Censors, other College officers, and examiners, on the nomination of the President and Council, was carried out.

A confidential report by the visitor and inspector of the General Medical Council on the Final Examination of the Conjoint Board was referred to the council of management for consideration and report.

A report was received and approved, dated July 22nd, from the conjoint committee appointed to consider and to report upon any alterations that may be desirable in the regulations for the First Conjoint Examination.

A report was received from the committee appointed to consider and to report on the question of the alleged physical degeneration of recruits for the army, the tenour of which was to the effect that the information furnished was not of such a character as to enable the College to express a decided opinion.

A report was received from the committee appointed to consider and to report on the practical safety and prophylactic value of anti-typhoid inoculation. This was to the effect that not only was a lessened susceptibility to the disease brought about as a result of the inoculation but that the case-mortality was largely reduced; also that with due care there was no direct danger, except possibly from some temporary increase of susceptibility immediately following inoculation.

A report was received from the representative of the College in the General Medical Council on the proceedings of that Council during its session in May last and at a special session in July.

The Parkes-Weber prize was awarded to Hugh Walsham, M.D. Cantab., F.R.C.P. Lond. The Council recommended that the Moxon medal should be awarded to John Hughlings Jackson, M.D. Aberd., F.R.S., as having especially distinguished himself by observation and research in clinical medicine. The Council also recommended that the Baly medal should be awarded to John Newport Langley, D.Sc., F.R.S., of Trinity College, Cambridge, as having pre-eminently distinguished himself in the science of physiology.

The quarterly report of the College finance committee was received and adopted, as were also the annual reports of the library committee and curators of the museum.

The quarterly report of the examiners for the Licence on the results of the April examination was received and also an application from Horatio George Adamson, M.D. Lond., praying for the restoration of Membership resigned by him in 1897.

The newly elected officers, examiners, and members of standing committees gave their faith to the College.

Looking Back.

FROM

THE LANCET, *SATURDAY*, AUGUST 6, 1825.

FOREIGN DEPARTMENT.

ANALYSIS OF FOREIGN MEDICAL JOURNALS.

On the insensibility of the Retina.

By M. MAGENDIE.

It has already been shown, that some parts usually considered as nerves, and consequently as the organs possessed of the greatest sensibility, were, notwithstanding, impervious to tactile impressions; that they could be even pricked and lacerated without appearing to induce the least feeling of sensibility, and such were the olfactory and optic nerves of the retina.

About four months since a young woman was brought to M. MAGENDIE, having two perfect cataracts, for the removal of which she expressed a very great desire, and the great wish M. M. had of ascertaining whether the retina did possess that exquisite sensibility so much insisted on by physiologists and metaphysicians, soon induced him to comply with her request. The cataract being of the soft kind could not be couched at once, it yielding to the pressure, and therefore only a portion could be depressed at a time; each time, however, a bit was carried down, the resistance from the parietes of the eye could be distinctly felt, forming at once a convincing proof of having pressed on the retina. Notwithstanding this, the patient not only did not complain, but appeared not even to have been conscious of such pressure being used, and which she necessarily must have shown had the retina been so sensible as is usually believed. Somewhat emboldened by this result, M. MAGENDIE directed the needle towards the bottom of the eye and touched the retina very slightly; this was repeated five or six times, but the woman evinced no feeling of sensibility. It could not have happened that the retina was paralysed, for the instant the nervous membrane was touched she expressed her great delight on again seeing the light.

The other eye underwent the same treatment, the nature of the cataract being the same. This time, however, less caution was observed. The crystalline lens was depressed as completely as possible; the retina was freely touched in many parts with the point of the instrument, even with a

force sufficient to have pierced through the membrane; all this, however, was done unknown to the patient, who felt no ill effects from it.

The experiment has subsequently been performed at the Hôpital de la Pitié, on a man affected with a cataract of the right eye. The crystalline lens was easily depressed, and the sight immediately restored; at different times in the course of the operation the retina was touched, but no sensation was produced indicative of any exquisite sensibility in the part.

In this case, as in the former one, the contact of the instrument, and even the pricks which were made in the retina, did not prevent the eyesight being completely restored. Thus it would appear, that the retina of man is devoid of sensibility except to the action of light, and thus far we in no wise differ from the lower animals.

"In a physiological point of view this result is more important, since," observes M. MAGENDIE, "it shows at all times the great superiority of experiments over abstract reasoning, and what deductions are more abstruse and complicated than those of philosophers, founded on the great sensibility of the retina!"—*Journal de Physiologie, June* 1825.

THE BATTLE OF THE CLUBS.

KIDDERMINSTER.

WE have received the following letter from the secretary of the Kidderminster Medical Society with a request for its publication:—

To the Editors of THE LANCET.

SIRS,—I write to inform you at the request of the Kidderminster Medical Society that after a conference with the Kidderminster Medical Aid Association the latter association has agreed to adopt the following new rules:—

1. A rule to prohibit canvassing.
2. That the cash reserve fund shall not exceed £300.
3. That it will not admit to the benefits of the association as public members any persons whose wages exceed £3 per week; also that the minimum contribution for public members of all ages shall in the future be 4*d.* per month or 1*s.* per quarter per member.

In consequence of this agreement the Kidderminster Medical Society has removed the professional disabilities previously imposed upon the medical officers of the Kidderminster Medical Aid Association and will in future meet them in professional consultation. I shall be obliged if you will publish this in your next issue.

I am, Sirs, yours truly,

O. C. PENRHYS EVANS,

August 1st. Honorary Secretary, Kidderminster Medical Society.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on August 4th, Mr. JOHN TWEEDY, the President, being in the chair.

It was resolved that diplomas of Membership should be issued to 120 successful candidates.

As recommended by the Court of Examiners, the University of Birmingham was added to the list of Universities whose graduates may present themselves for the examinations for the Fellowship without first becoming Members of the College.

It was resolved that diplomas in public health should be issued jointly with the Royal College of Physicians of London to the 17 successful candidates.

It was resolved that, as recommended by the museum committee, facilities should be offered to the University of London for holding the examinations in pathology of the University at the College instead of at the Examination Hall, with the object of preventing the injury likely to be caused in course of time to the museum specimens by their frequent removal from the College premises.

It was resolved that the loan of museum specimens to the University of London for examination purposes be renewed for another year and that the University be requested to take into consideration the practicability of holding its examinations in pathology at the College.

It was resolved that the loan of museum specimens to the Army Medical Department for examination purposes be renewed for another year.

Permission was granted, subject to the usual conditions, to Mr. George Pernet to make use of the dermatological models, drawings, and specimens in the museum for the purpose of publication in the form of an atlas.

It was resolved to have rooms Nos. 2 and 3 of the museum painted and therefore the museum will be closed from August 8th to Oct. 1st.

The balance-sheet was approved and adopted. It showed that the balance of income over expenditure amounted for the year to £2004.

The Council elected Mr. P. Sidney Spokes, M.R.C.S., L.D.S., a member of the Board of Examiners in Dental Surgery.

A report was read from the committee on the physical disability of recruits for the army which was appointed to consider a memorandum forwarded through the Home Office. The report was approved.

A letter was read from Mr. Thomas Bryant reporting the proceedings of the General Medical Council at its late session and the best thanks of the Council were given to Mr. Bryant for his services as the representative of the College.

A letter was read from Sir William Turner, K.C.B., President of the General Medical Council, forwarding copies of reports on the first examination under the Conjoint Board. The consideration of this was postponed until the October meeting.

A report from the conjoint committee on the first examination was received and entered on the minutes but its consideration was postponed until October.

A letter was read from Messrs. Davidson and Morris, of 40, Queen Victoria-street, solicitors to the Worshipful Company of Spectacle Makers, stating that the company had appointed a committee to consider two memorials signed by 220 opticians praying the company to include the subject of sight-testing in their examination and to extend their diploma by certification of efficiency therein and that the committee propose to sit in November next to hear evidence and will be glad to have the views of the College, more especially as to what further restrictions should be included in the agreement which is to be signed by the diploma holders in the event of the request of the memorialists being granted. The letter was referred to the President and the two Vice-Presidents to consider and to report to the October meeting.

A letter of thanks was read from Lieutenant-Colonel W. H. Cadge, I.M.S., thanking the Council for the resolution passed by it in reference to his uncle, the late Mr. William Cadge.

A letter was read from the Director of the Nottingham Museum and Art Gallery thanking the Council for the loan of the portrait of the late Sir Spencer Wells and stating that the portrait would be removed and returned by the museum agents and would be insured for such sum as the College may wish.

Mr. C. T. Dent and Mr. G. H Makins were appointed trustees of the Hunterian and Jacksonian funds in place of Mr. Reginald Harrison and Mr. Alfred Willett, who had resigned on ceasing to be members of Council.

The Chairman of the Library Committee reported the presentation to the library by Professor Retzius of Stockholm of the following works: 20 tracts by Professor Retzius himself or in collaboration and 11 volumes of his own and his father's works, including "Anthropologia Suecica" and the "Anthropology of the Finns," and his edition of Johannes Müller's letters to Anders Retzius.

The best thanks of the Council were given to Professor Retzius for his valuable gift.

The next meeting of the Council will be held on Oct. 15th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8353 births and 4158 deaths were registered during the week ending August 1st. The annual rate of mortality in these towns, which had been 13·7, 13·5, and 13·4 per 1000 in the three preceding weeks, rose to 14·4 per 1000 last week. In London the death-rate was 13·5 per 1000, while it averaged 14·8

in the 75 other large towns. The lowest death-rates in these towns were 3·3 in Hornsey, 5·4 in Leyton and in Handsworth, 6·5 in Plymouth, 6·6 in Bournemouth, 7·6 in Tottenham and in East Ham, 8·1 in Croydon, 8·2 in Kings Norton, and 8·3 in Reading; the highest rates were 19·9 in Tynemouth, 20·1 in Great Yarmouth, 20·2 in Birkenhead, 20·6 in Sunderland, 21·2 in Liverpool, 24·9 in Bootle, and 25·9 in Warrington. The 4158 deaths in these towns last week included 591 which were referred to the principal infectious diseases, against 441, 473, and 532 in the three preceding weeks; of these 591 deaths 330 resulted from diarrhœa, 84 from measles, 51 from diphtheria, 49 from whooping-cough, 43 from scarlet fever, 29 from "fever" (principally enteric), and five from small-pox. No death from any of these diseases was registered last week in East Ham, Hastings, Bournemouth, Burton-upon-Trent, West Bromwich, Derby, Huddersfield, and South Shields; the highest death-rates from the principal infectious diseases were recorded in Walsall, Aston Manor, Grimsby, Stockport, Bootle, Sheffield, Tynemouth, and Rhondda. The greatest proportional mortality from measles occurred in Ipswich, Wolverhampton, Coventry, Stockport, Sheffield, and Merthyr Tydvil; from scarlet fever in Great Yarmouth, Walsall, and in Bootle; from diphtheria in Reading and in Stockton-on-Tees; from whooping-cough in York; from "fever" in Grimsby and in Rotherham; and from diarrhœa in Aston Manor, Birkenhead, Bootle, Warrington, Tynemouth, and Rhondda. Small-pox caused two deaths in Leeds, one death in Liverpool, one in Bootle, and one in Gateshead, but not one in any other of the 76 large towns. The Metropolitan Asylums hospitals contained 66 small-pox patients on Saturday last, August 1st, against 77, 71, and 71 on the three preceding Saturdays; nine new cases were admitted during last week, against 31, seven, and 12 in the three preceding weeks. The number of scarlet fever patients under treatment in these hospitals and in the London Fever Hospital, which had been 1701, 1710, and 1711 at the end of the three preceding weeks, had further risen to 1726 at the end of last week; 237 new cases were admitted during the week, against 253, 243, and 229 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 127, 115, and 130 in the three preceding weeks, fell last week to 110, but were 18 below the number in the corresponding period of last year. The causes of 43, or 1·0 per cent., of the deaths in the 76 large towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Birmingham, Leicester, Nottingham, Salford, Bradford, Leeds, and in 49 other smaller towns; the largest proportions of uncertified deaths were registered in Bournemouth, Northampton, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·2, 15·2, and 15·4 in the three preceding weeks, fell to 14·7 per 1000 during the week ending August 1st and was 0·3 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·8 in Perth, 12·3 in Aberdeen, and 12·4 in Leith, to 15·4 in Edinburgh and 18·0 in Greenock. The 480 deaths in these towns included 28 which were referred to diarrhœa, 15 to whooping-cough, six to measles, five to diphtheria, five to "fever," three to scarlet fever, and one to small-pox. In all, 63 deaths resulted from these principal infectious diseases last week, against 82, 57, and 62 in the three preceding weeks. These 63 deaths were equal to an annual rate of 2·0 per 1000, which was 0·4 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 31, 22, and 34 in the three preceding weeks, fell last week to 28, of which 15 occurred in Glasgow, four in Dundee, three in Edinburgh, three in Aberdeen, and three in Paisley. The deaths from whooping-cough, which had been 18, 15, and 11 in the three preceding weeks, rose again last week to 15 and included eight in Glasgow. The fatal cases of measles, which had been 13, 11, and seven in the three preceding weeks, further decreased last week to six, of which three were registered in Edinburgh and two in Glasgow. Of the five fatal cases of diphtheria four occurred in Glasgow. The deaths referred to different forms of "fever," which had been nine, three, and six in the three preceding weeks, were five last week and included three in Glasgow. The deaths referred to diseases of the respiratory organs, which had been 90, 73, and 79 in the three preceding weeks, fell to 68 last week, but were 11 below the number in the corresponding period of last year. The causes of four, or 0·8 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·2, 16·0, and 17·5 per 1000 in the three preceding weeks, rose again to 18·3 per 1000 during the week ending August 1st. During the past four weeks the death-rate has averaged 17·5 per 1000, the rates during the same period being 13·1 in London and 14·6 in Edinburgh. The 133 deaths of persons belonging to Dublin registered during the week under notice showed an excess of six over the number in the preceding week and included five which were referred to the principal infectious diseases, against two, six, and nine in the three preceding weeks; of these, four resulted from diarrhœa and one from measles. These five deaths were equal to an annual rate of 0·7 per 1000, the death-rates from the principal infectious diseases last week being 1·6 in London and 1·4 in Edinburgh. The 127 deaths in Dublin last week included 40 of children under one year of age and 20 of persons aged 60 years and upwards; the deaths of infants showed an excess of 27, and those of elderly persons a decrease of 17, as compared with the respective numbers recorded in the preceding week. Six inquest cases and six deaths from violence were registered and 49, or more than a third, of the deaths occurred in public institutions. The causes of seven, or more than 5 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon A. R. Bankart, M.V.O., of the royal yacht *Victoria and Albert*, is specially promoted to Staff Surgeon for distinguished service.

The following appointment is notified:—Staff Surgeon R. Hill to the *Racer* for Osborne College, cadet sick quarters.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated July 28th, 1903):—F. J. W. Porter, D.S.O., O. L. Robinson, C. E. G. Stalkartt, T. W. Gibbard, C. J. Healy, H. J. M. Buist, D.S.O., G. B. Stanistreet, F. J. Wade-Brown, W. E. Hardy, J. E. Brogden, G. W. Tate, N. Faichnie, T. J. Lenehan, F. McDowell, F. W. Begbie, I. A. O. MacCarthy, C. W. Duggan, and J. C. Jameson.

Lieutenant F. C. Lambert, from the Seconded List, to be Lieutenant. Dated August 1st, 1903

The undermentioned Lieutenants are confirmed in that rank:—J. G. Bell, M. G. Winder, J. Gatt, T. S. Coates, A. E. B. Wood, J. C. G. Carmichael, R. H. Bridges, J. A. W. Webster, J. B. Meldon, R. C. Wilmot, C. W. Holden, H. B. Kelly, E. M. Pennefather, G. H. J. Brown, B. H. V. Dunbar, D. Ahern, and D. G. Carmichael.

Captain A. Cuddon Fletcher has arrived in the Home District for duty and Captain W. J. Taylor joins the Home District for duty on Sept. 1st. Captain F. Kiddle is ordered to the Western District for duty.

The undermentioned officer of the 3rd Battalion Australian Commonwealth Horse is granted temporary rank in the Army whilst serving in South Africa:—To be Captain (dated April 2nd, 1902): Captain Alexander Fullerton, medical officer.

The undermentioned officer of the 4th Battalion Australian Commonwealth Horse is granted temporary rank in the Army whilst serving in South Africa:—To be Captain (dated March 26th, 1902): Captain Adam Richard Stacpoole, medical officer.

The undermentioned officer of the 5th Battalion Australian Commonwealth Horse is granted temporary rank in the Army whilst serving in South Africa (dated May 22nd, 1902):—To be Lieutenant: Lieutenant George Lawaluk Bell, medical officer.

The undermentioned officer of the 6th Battalion Australian

Commonwealth Horse is granted temporary rank in the Army whilst serving in South Africa (dated May 19th, 1902):—To be Captain: Captain Douglas Andrew Shields, medical officer.

The undermentioned officer of the 7th Battalion Australian Commonwealth Horse is granted temporary rank in the Army whilst serving in South Africa (dated May 19th, 1902):—To be Lieutenant: Lieutenant George Alexander Webster, medical officer.

The undermentioned officers of the Field Hospital and Bearer Company of the Australian Commonwealth Horse are granted temporary rank in the Army whilst serving in South Africa, as follows (dated Feb. 12th, 1902):—To be Majors: Major Terence Albert Green, D.S.O., and Major Neville Howse, V.C. To be Captains: Captain Frederick David Jermyn and Captain Arthur John Nyulasy. To be Lieutenants: Lieutenant William Arthur James, Lieutenant Henry H. Formby, and Lieutenant David Duncan Cade.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major James Mackay having resigned his appointment in the Volunteers, ceases to be an officer in the Army Medical Reserve of Officers. Surgeon-Captain W. J. Lawrie, having resigned his appointment in the Volunteers, ceases to be an officer in the Army Medical Reserve of Officers.

ROYAL ARMY MEDICAL CORPS (MILITIA).

The undermentioned Supernumerary Officers are absorbed into the Establishment: Captain T. W. G. Kelly (dated August 1st, 1903); Captain H. E. Mortis (dated August 1st, 1903); Captain J. E. O'Connor (dated August 1st, 1903); Lieutenant M. A. Cholmeley (dated August 1st, 1903); and Lieutenant H. Fox (dated August 1st, 1903).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 4th Durham: Surgeon-Lieutenant W. Gray to be Surgeon-Captain. Dated July 11th, 1903. 1st Forfarshire: Surgeon-Major W. Chalmers-Cowan to be Surgeon-Lieutenant-Colonel. Dated July 18th, 1903. 1st Shropshire and Staffordshire: Surgeon-Lieutenant W. Hind to be Surgeon-Captain. Dated August 1st, 1903.

Royal Engineers (Volunteers): 1st Bedfordshire: Surgeon-Lieutenant A. C. Hartley to be Surgeon-Captain. Dated August 1st, 1903.

Rifle: 1st Volunteer Battalion the Northumberland Fusiliers: Surgeon-Captain W. B. Mackay to be Surgeon-Major. Dated August 1st, 1903. 1st Volunteer Battalion the Royal Sussex Regiment: Harold Vaughan Pryce to be Surgeon-Lieutenant. Dated August 1st, 1903. 1st (Pembrokeshire) Volunteer Battalion the Welsh Regiment: Second Lieutenant R. D. Evans resigns his commission and is appointed Surgeon-Lieutenant. Dated August 1st, 1903. 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant J. S. Mackay to be Surgeon-Captain. Dated August 1st, 1903. 3rd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain J. Strang to be Surgeon-Major. Dated August 1st, 1903.

FEES FOR CIVILIAN MEDICAL PRACTITIONERS.

By a recent Royal Warrant it is provided that when a detachment of the army is not within reach of a military medical man, the officer commanding may call in a civilian medical man to render medical attendance to the officers and men belonging to the detachment, and to other persons entitled thereto at the public expense, at the undermentioned yearly rates (which includes the cost of medicines):—If there are less than ten persons, £5; if there are ten persons or more, for every complete 25, or a portion of 25, provided that the total emoluments for all services, exclusive of the examination of recruits, shall not in any instance exceed £1 for any one day, £10. In special circumstances, and when the medical duties required of the civilian practitioner do not come within the range of ordinary medical attendance, the remuneration shall be at such rates as may be determined by the commander of the army corps or the officer commanding a district lying outside an army corps command.

MENTIONED IN DESPATCHES.

In despatches relating to the Kano-Sokoto Campaign, published in the *London Gazette* of July 31st, Mr. W. H. Langley, L.R.C.P., L.R.C.S. Irel., principal medical officer, is mentioned as having worked hard and well throughout the operations.

NEW ROYAL ARMY MEDICAL CORPS UNIT.

A new unit of the Royal Army Medical Corps to be designated No. 20 Company was formed at Salisbury Plain on August 1st, under the command of Major C. E. Faunce, R.A.M.C. All officers, warrant officers, non-commissioned officers, and men of the Royal Army Medical Corps at present serving on Salisbury Plain, with the exception of those temporarily employed, will be taken on the strength of the new company.

Correspondence.

"Audi alteram partem."

PHIMOSIS AND CANCER OF THE PENIS.

To the Editors of THE LANCET.

SIRS,—As some emphatic statements have lately been published to the effect that phimosis is a potent cause of cancer of the penis[1] which I believe convey an erroneous impression, I shall be obliged if you will allow me brief space to justify my contention. An elongated, tight, phimotic condition of the prepuce is one of the very commonest anomalies and a large proportion of the male population is attacked in this way, often to an extreme degree. If therefore phimosis be, as alleged, a potent cause of cancer of the penis this particular local variety of cancer should be very common. The fact is, however, that cancer of the penis is one of the rarest forms of malignant disease—less than 4 per cent. of all cancers in men being of this variety.[2] If phimosis were really a potent cause of cancer of the penis how very different would this proportion be. According to American observers the negroes of that country are almost universally affected with phimosis, yet amorg these people cancer of the penis is of even rarer occurrence than in England; thus Rodman of Philadelphia has never seen a case in the practice of a lifetime and the Philadelphia hospital registers for a period of 30 years do not record a single case, although other forms of cancer are common. The experience at Louisville is similar, for out of 207 deaths from cancer in negroes not a single one was due to cancer of the penis.

I am, Sirs, yours faithfully,

Clifton, Bristol, July 30th, 1903. W. ROGER WILLIAMS.

THE USES OF PILOCARPINE.

To the Editors of THE LANCET.

SIRS,—The use of pilocarpine in pneumonia, mentioned by Mr. William Roper in THE LANCET of August 1st, p. 342, was first brought to notice by Sziklai some years ago. By him it was regarded as a specific for that disease, but many observers have doubted this—notably, Rosenberg who holds that pilocarpine, even when given in physiological doses, aggravates the symptoms of pneumonia. I have notes of 15 cases where treatment was commenced with pilocarpine nitrate alone, given hypodermically in doses of one-tenth to one-fifth of a grain twice in the 24 hours. They were all adult hospital cases in the early stages of pneumonia. In one case, that of a man apparently in good condition, after the second dose severe dyspnœa suddenly came on, followed rapidly by collapse and heart failure. In spite of atropine and cardiac stimulants the man never rallied. In another strangury with retention of urine, severe vomiting, diarrhœa, and heart failure occurred after three doses, but in this case the patient eventually made a protracted recovery. In three others the gastric irritation produced nausea and vomiting which was so marked that the further use of the drug had to be discontinued. The rest made uneventful recoveries. Afterwards I tried several cases with pilocarpine in conjunction with strychnine with good and satisfactory results. With the exception of the two cases mentioned I have not met with any heart failure; this I attribute to the action of the free sweating in lowering the temperature of the body and

[1] Polyclinic, May, 1903.

[2] Of 2669 men with cancer under treatment in London hospitals I have found that only 106 had cancer of the penis, and of 2891 similar cases in Vienna hospitals Gurlt found only 108 thus affected.

at the same time ridding it of some noxious products of tissue waste. I am certain also that in some of the cases the pilocarpine has had a good effect on the enfeebled digestive powers. At the same time I am satisfied that all these effects can be obtained by the use of other and much safer drugs.

I am, Sirs, yours faithfully,

August 3rd, 1903. J. F. HODGSON, M.D., Ch.B. Vict.

To the Editors of THE LANCET.

SIRS,—The letter of Mr. W. Roper in THE LANCET of August 1st (p. 342) suggests a few further remarks from me on the dose and action of pilocarpine in the treatment of pneumonia. One of the chief uses of the drug in this disease seems to consist in the relief of pleuritic pain by liquefying "dry" pleuritic exudation, thereby permitting a freer inspiratory excursion and relieving negative pressure on the heart, the unembarrassed action of which it is so desirable to try to maintain. The second most important action is secretory and that this is an active process of the epithelial cells and not dependent on filtration is, I think, sufficiently demonstrated, apart from the well-known experiment on the parotid gland, by the almost constant initial rise of temperature of from ½° to 1½° F. after its administration. In this way the toxin of pneumonia, which is probably intracellular, is evicted.

The dose of one-third of a grain, as suggested by Mr. Roper, is by no means free from danger, as in addition to the depressing effects of purging and vomiting which it often produces the bronchial secretion may be so profuse as to cause alarming symptoms of asphyxia in debilitated subjects and more especially in those in whom toxæmic symptoms are a marked feature. Such patients often only half expectorate and in the deep inspirations following a severe attack of coughing a quantity of fluid mucus may be sucked into the infundibula of the sound portions of both lungs, resulting in sericus consequences.

Until further clinical experience of this powerful drug is obtainable I do not consider it safe or prudent to give more than one-tenth of a grain hypodermically, at all events in pneumonia. This dose I employed in South Africa in 1901, and from a subsequent experience of over 30 cases in Kaffirs and whites, chiefly the former, I have no reason to use a larger quantity. One-third of a grain may have its uses in other diseases but all that is required in pneumonia is accomplished by the smaller dose which may be repeated on the following day if necessary.

I am, Sirs, yours faithfully,

Bournemouth, August 3rd, 1903. E. CURTIS, M.D. R.U.I.

CONTINUOUS RECTAL ALIMENTATION.

To the Editors of THE LANCET.

SIRS,—Information kindly supplied by Dr. H. D. Rolleston enables me to state that a method almost identical with that which I recently demonstrated at the Swansea meeting of the British Medical Association had been described in 1886 by Dr. D. J. Mackenzie of Glossop.[1] The chief point of difference is in the mode of regulating the rate of delivery. Dr. Mackenzie, using a tube of small diameter, varies the level of the vessel containing the fluid for injection. The screw-clip which I have employed is, perhaps, a simpler way of controlling the outflow. The apparatus is also simplified by immersing part of the length of the tube in a basin of hot water as this obviates the necessity for applying a constant supply of heat to the container. Other modifications of the same method may have been put into practice references to which would be much valued.

I am, Sirs, yours faithfully,

Curzon-street, W., August 4th, 1903. WM. EWART.

THE TREATMENT OF GOITRE BY DISTILLED OR RAIN WATER.

To the Editors of THE LANCET.

SIRS,—Kindly allow me to make some further remarks on this subject, especially as some of your correspondents appear to have a little misunderstood my previous letter, though it is encouraging to find that the general opinion is in favour of my views and that so many have had favourable experience in the same direction. Of course, I attribute no *positive* therapeutic influence to distilled or rain water; no "*specific*" influence, that is to say. The influence is *negative* and lies simply in its eminent purity and freedom from possible sources of contamination, as I think my letter sufficiently makes manifest.

No doubt, for many years past, the occasional connexion of the development of goitre with drinking water of an imperfect purity ("bad" water) and especially with "hard" water—i.e., water containing lime or earthy salts in solution—has been observed or suspected, and a change of drinking supply recommended. Instances might be multiplied of this. Some years ago, I am informed, quite an epidemic of goitre prevailed at Ackworth School in Yorkshire. The water-supply was changed and it disappeared. I have myself recommended for years that in such cases some pure soft water or rain water should be substituted with advantage.

The important point, however, is that in the cases I gave the water-supply is quite unexceptionable. The waters supplied by the Lancaster and Fylde Companies are both regarded by experts as beyond cavil both as regards purity and hardness. They are pre-eminently pure and soft waters. And yet they must contain an influence deleterious to the thyroid gland, else why the rapid change when distilled or rain water (in other words, distilled water, artificial or natural) was substituted? What is this influence or element in the water—this "goitrous poison," as Dr. Stevenson truly terms it? It remains unknown and undiscovered. It was at one time supposed to be lime but that has been disproved; indeed, the present cases would dispose of such a theory. In the cases I described it was the known purity of the water that lulled suspicion in my mind for some time and this no doubt also misled the authorities in London and Germany to whom I alluded. I find no reference in any text-book I have consulted to the use of distilled or rain water in such cases. The goitre is regarded as due to other causes.

Your correspondent, Dr. Stevenson, in his letter in your issue of August 1st, p. 340, speaks of the absence of goitre in Constantinople and Venice where rain water alone is drunk. I have also a letter from a medical correspondent who tells me that in a tract of Queensland containing a population of 20,000, where the people drink rain water only, a resident there for seven and a half years has never heard of a case. If these be proved facts, and I have no reason to doubt them, they furnish highly important factors in a knowledge of the causation of the disease and go far to prove that *water and water alone* (or rather that with which water has been accidentally associated in its course over and through the earth) *is responsible for goitre*. I am therefore justified in insisting that there are deleterious matters, beyond the reach of the analyst to determine, by which water may, and often does, become affected in its course towards collection and distribution in the usual way. The "goitrous poison" is evidently not acquired in the air, or rain water would manifest it; it must therefore be acquired in the earth.

That the poison attacks usually a few susceptible individuals only is but another illustration of the parable of the "sower and the soil," and when the conditions are very favourable to the development of thyroid mischief (when the susceptibility is great) it is not to be wondered at that the effect will remain even after the cause has been removed, and that the goitre persist though perfectly pure water be consumed hereafter.

I am, Sirs, yours faithfully,

Lancaster, August 3rd, 1903. C. A. RAYNE, M.D. Lond., &c.

APPENDICITIS—A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In your report of the Medicine Section of the British Medical Association meeting at Swansea, the impression of what I said is a little misleading. I stated that in subacute appendicitis, particularly as occurring in elderly people, an aperient with belladonna in physiological doses and assisted by hot fomentations, &c., was often useful. I went on to say that in the acute forms where the onset was not so extremely severe as to require immediate operation, large doses of the tinctures of opium and belladonna in their usual relative proportion (three to one), given frequently until, and except when, the patient was asleep, and continued, with water only also permitted, for several days gave

[1] Cf. Brit. Med. Jour., June 19th, 1886, vol. i., p. 1161.

me good results. The water, until the vomiting had ceased, was given in teaspoonful doses every quarter of an hour.

I might add that in two cases in which I had sought the cooperation of a surgeon, but in which it was decided not to operate, the inflammation was so severe that in the one at an operation undertaken 18 months later the appendix was represented only by adhesions and caseous débris was found along the pelvic border up to and even beyond the pubes. In the other, a hospital case, a subphrenic abscess developed and burst through the lung, the patient's life being only saved by large doses of brandy and strychnine hypodermically every half-hour at first; both of these patients are now in excellent health. I trust that you will be able to find room for this addition to your report. With thanks in anticipation, I am, Sirs, yours faithfully,

Chester, August 3rd, 1903. HENRY W. KING, M.D. Edin.

GRANADA: ITS HIGH DEATH-RATE AND CONTAMINATED WATER-SUPPLY.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

AFTER an absence of many years, finding myself in Madrid for the International Congress, I returned to Granada anxious to see what improvements had been effected in that most picturesque but deplorably unhealthy town. After spending six hours in the train to accomplish a journey of 77 miles from Bobadilla junction I arrived at this ancient Moorish capital and it became at once apparent that there had been some attempt at haussmannisation. A new boulevard has been cut right through the centre of the town, letting light and air into some dark and unwholesome places. It was the Chamber of Commerce that took the initiative in piercing through one of the worst quarters so as to create a new and broad street. It managed to buy up nearly all the houses by means of friendly negotiations. The poorer sections of the population who were thus forced to quit their tenements went to live in the Albaicin quarter, where many empty houses may be found, though in the days of the Moors this part of Granada was thickly populated. Beyond the cutting of this new thoroughfare and the creation of an institution for the provision of lymph from the calf, little or nothing seems to have been attempted to improve the sanitation of the town. There has been a good deal of talk about the most urgent of all needed reforms, the water-supply, but nothing has been done. Yet it would be impossible to find any place where the necessity of protecting the water-supply has been more frequently and emphatically indicated. Countless thousands of human beings have been poisoned and brought prematurely to the grave by the water drunk at Granada. This fact is proved most conclusively by the statistics, by the high death-rate, and by appalling epidemics, yet year after year rolls by and nothing is done. Once more, therefore, the ghastly story must be repeated, and if the fear of death and the desire to save life and to reduce the sum-total of human suffering do not suffice to make the inhabitants of Granada take action then perhaps they may be awakened by a sense of shame when they find themselves publicly denounced. Public contumely if nothing else may induce them to endeavour to remove so disgraceful a stain on their local and national reputation. Good work has been done in Spain. In spite of poverty and political troubles various improvements have been effected at Madrid and elsewhere, but nowhere was there greater need of such measures than at Granada; no town has suffered so much; nowhere is the danger more evident.

To render this clear to those who are unacquainted with the local history of Granada some words as to the past are necessary. Thus, according to official figures, the rate of mortality in Granada during the ten years 1860 to 1870 inclusive was equal to 40·4 per 1000 per annum. During the next decade there was no material improvement, and then in the following decade came the punishment, the appalling cholera epidemic of 1885. It will be remembered that the deaths were then so numerous that it was impossible to bury the victims of the cholera and hundreds of bodies without coffins lay rotting in the open air. The stench was blown over to the suburb of Zubia, and the epidemic spread to that district, killing among others the Archbishop of Granada. It was by the employment of criminals, who were beaten with sticks, urged forward at the point of the bayonet, and threatened by loaded rifles, that Lieutenant Varona saved the situation and finally had the accumulation of bodies buried at the rate of 500 per day. What all this meant may best be understood when the fact is recalled that there were 313 deaths from cholera in one single day out of a population of 75,000. This would mean, if calculated at the same proportion, more than 20,000 deaths in Greater London from cholera alone, and this in one single day. Perhaps in such circumstances difficulties might arise in London as in Granada, for it would be no easy matter to bury so large a number of cholera-stricken people. It is not necessary, however, to enter into further details concerning this hideous epidemic. It caused a profound sensation at the time not only in Spain but throughout the world and efforts were made to send help to the sufferers. A special fund for that purpose was opened at the Mansion House in London and met with a generous response. But while help thus came from afar who would have imagined that those on the spot and who had been, and in the future will be, the first to suffer would do nothing for themselves? The official statistics published before the outbreak of the cholera epidemic in 1885 showed that about one-third of the deaths occurring in normal times at Granada were due to intestinal disorders. This very high proportion is ascribed to the pollution of the water-supply. Nobody challenges this opinion and yet nothing is done. The terrible cholera epidemic of 1885 would, it was thought, bring about the long-needed reforms; nevertheless there is no change. The death-rate has been slightly reduced, probably as a result of the new boulevard and the abolition of some slums, but it is still equal to 38 per 1000 per annum. The deaths due to intestinal disorders are equal to 25 per cent. of the total deaths, whereas taking Spain as a whole they only amount to 14 per cent. Therefore the conditions that produce this form of disease are exceptionally prevalent at Granada.

These fatal conditions are well known. They have been denounced over and over again and there is absolutely no excuse for their continued existence. Granada is most favourably situated. Everything except the ignorance and apathy of its inhabitants combines to make it what it was in the days when the Moors brought their science and civilisation to Europe. There is an exceptionally ample supply of pure water coming from the neighbouring hills, the offshoots of the Sierra Nevada, but so careless are the inhabitants that this water is rendered most foul before it reaches the houses where it is used for drinking purposes. Again, the topographical position of the town is such that there are exceptional facilities for drainage and beyond there are vast plains where the sewage could be utilised for irrigation purposes and the processes of purification would thus render service to local agriculture. It was in the year 711 that the Moors under Tarik defeated and killed the last Visigoth king and soon after they began to build and notably at Granada. It was not till the year 1492 that this town was recaptured by the Spaniards. Now the Moors at once introduced a system of drainage and of water-supply and, for that distant period, what they did may well be qualified as advanced sanitary engineering. The Moors built sewers and instituted water-carriage drainage and sewage farms many centuries before anything of the sort was attempted in Christian Europe. When the Christians got back to Granada they did not know how to utilise the sanitary works which the Moors had left behind. Instead of attending to the sewers, repairing and rebuilding them, they were left to decay and their contents were allowed to escape into the subsoil. This is all the more dangerous as the water-supply is delivered in small earthenware pipes of the same manufacture as that which existed in the times of the Moors and this would not now be qualified as sanitary material. It is not enamelled inside; it is light, brittle, and porous. The streets are so narrow that these conduits must be laid close to the sewer. If they sometimes escape contamination from the leaking sewers it is because they are laid on a level with the top rather than the bottom of the sewers. In this latter case, however, they are so near the paving-stones that they are frequently contaminated by the dirt of the street. Sometimes these pipes are broken by the passage of a heavy cart or some sudden shock, and then the water comes bubbling up into the street, causing a pool, a mess, a little rivulet, and an

accumulation of mud which will remain for several days or weeks before the pipe is mended. One of the dangers of a large almost inexhaustible water-supply is that when a pipe bursts or leaks there is no urgent necessity to prevent waste and therefore accidents that lead to the contamination of the supply remain unrepaired for an indefinite time.

Instead of using bent or elbow-shaped pipes there are junctions formed in various parts of the street. These are primitive and clumsy contrivances and simply consist of little pits where pipes coming from different directions meet. As the pit fills the water runs down the different pipes and thus it is made to turn the corners and to flow from the street at right angles into the houses on either side. Over these little distributing catch pits, if they may be so described, a flagstone is placed and a circular aperture about five inches in diameter is cut out of this stone. A stone of about the same size is jammed in. Sometimes this gets loose and is kicked away and there is a hole through which the drinking water may be seen from the street causeway, through which also the dirt from the street, from the boots of the people passing by, falls without let or hindrance into the water which the people drink. Such a hole I noticed opposite the door of a medical practitioner's residence and close to the Ayuntamiento, yet neither the frequenters of the town hall nor the practitioner would seem to have taken the slightest trouble to remedy this evident cause of contamination of water. That poverty-stricken people who do not know how to read or to write should not notice these things can be understood; but here we have members of the municipality, members of the medical profession, and others who should know better, walking daily by places where the water-supply is contaminated, accidentally kicking the dust off their own boots into the water, and yet they do not seem to make the slightest effort to save themselves and the rest of the population from this great danger. Such apathy is truly extraordinary.

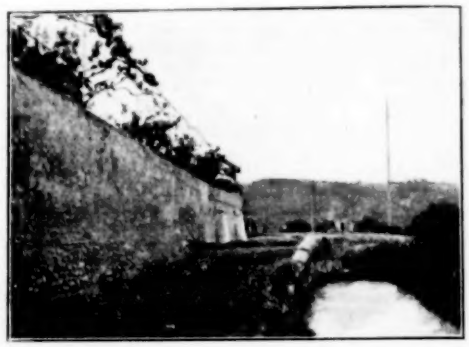
Nor is it within the walls of the town and in its streets only that the water is contaminated. Outside the water arrives in open channels. During the great cholera epidemic of 1885 it was pointed out that a lady who contracted the disease and died after only eight hours' illness had a "vista"

FIG. 1.

Photograph taken in June, 1903, of houses where cholera was found in 1885. The "vista" window of the room where a fatal case occurred, still projects over the unprotected water-supply.

window to her room which was actually suspended over the uncovered stream of the Granada water-supply. Nearly 18 years have elapsed since this occurred. The population on the banks of the stream has increased. Nothing whatever has been done to protect the supply and I was able to photograph the house with its projecting or "vista" window still hanging over the water-supply. (See Fig. 1.) There is, indeed, an entire terrace of houses overlooking the water and on the other side of the stream there is a high-road which also contributes its supply of dust and dirt to the water. Coming still nearer to the town the stream and the road pass by a high wall bounding and upholding a terraced garden. It was raining when I visited this place and I was able to take a photograph which showed the drainage from the garden, mixed, of course, with whatever manure may be used in the garden, flowing from water-spouts right into the stream. (See Fig. 2.) It will be noticed that at the point where I took the photograph the stream leaves the base of the wall, passes under the high road, and comes out on the other side of that thoroughfare. Not a thought seems to be given to the many chances of contamination that so evidently

FIG. 2.



High wall bounding a terraced garden which is drained by water-spouts into the open water-supply.

exist. A roughly constructed bridge spans the stream, the sides of the roadway crumble into the water, and the drainage from a manured garden or the dust and dirt of a terrace of houses all fall into the water without let or hindrance. At last, when close to the town by the Puerta de los Molinos, the stream is roughly roofed over with flagstones that fit very loosely. Here there is a cluster of houses and cottages built right over the stream. In the small backyard of one of these houses, where there was a stable with manure on the ground, the flagstones covering the stream were bare and through the interstices I could see the water passing underneath. After thus collecting some of the liquid stable manure from the back of this cottage the stream goes under an open space between houses. Here there is a rough track leading up a hillside and down the centre of this road there is a very small rivulet or gutter. Now the inhabitants of the surrounding houses, without

FIG. 3.

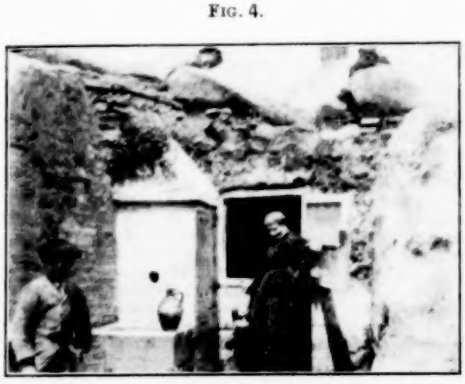
Women washing dirty linen at a surface stream beneath which, and in communication with which, flows the water-supply.

thought of the water-supply passing below, have piled up some big loose stones so as to create a small dam and though there is not much water coming down the side of the hill at this point, still it suffices with the aid of the stones to form a few little puddles where the women can wash the dirty linen. Between these puddles and the water-supply flowing beneath them there are only a few inches of earth and loose-fitting flagstones. The

water soiled by the dirty linen must therefore to some extent fall into the drinking supply. The women who were washing when I took the photograph were kneeling immediately upon the roof of the channel or aqueduct which passes underneath and conveys to Granada a very large portion of the water drunk in that town. (See Fig. 3.)

There are three main sources feeding different parts of the town, the acequia Gorda, the acequia Cadi, and the acequia de San Juan, and I have described that which follows the Camino de Güejar and supplies the most important part of the town. Of the other two sources one supplies the Alhambra Hill and the other the Albaicin Hill and quarter. In regard to the latter I also took a photograph on the side of the hill, not far from the church of San Juan. The canal here is by the side of one road and under another road that is on a higher level. A door has been cut into the side of the aqueduct and people come and dip their pitchers into the water, taking what they need for domestic purposes. Of course, the outsides of these jugs and pitchers are more or less soiled and yet they are dipped into the water. To prevent this obvious cause of contamination the doors during the time of cholera were locked and a pump was built by the side of them so that water could be pumped out. But this was found to be a slower process than dipping the pails and jugs into the water, so the locks and pumps were destroyed and the simple, quick but dangerous process was renewed. The photograph I have taken shows that a road passes by the side of the water canal, another road above, that the door giving access to the water is open, that a woman is about to dip a bucket into the water, and that the pump which was to prevent this form of contamination has been broken. (See Fig. 4.) Many other

FIG. 4.



Woman about to dip her arm and jug, both presumably dirty, into the water-supply, the pump being broken.

such means of direct ingress to the water-supply exist along the whole route.

The water thus carelessly brought to the town is not filtered but delivered just as it is to the inhabitants. It is not often drunk just as it arrives. Not so much for the purpose of purifying as for the sake of obtaining cool water, great earthenware jars, some six feet deep and from two to three feet wide, are sunk in the soil below and underneath the houses. Then when the flow of water from the pottery pipes in the streets seems clear and free from dirt bucketfuls are drawn off and poured into these jars—jars of the same type as those in which Ali-Baba hid his 40 thieves. Here the water remains and is perhaps not touched for weeks. The object in view is to have cool water; the necessity of possessing pure water is not yet understood in spite of the lessons which cholera and the high death-rate should teach. Nothing can be more discouraging than to see that so little progress has been accomplished, though the need of a few elementary measures of sanitation is so very obvious. The statistics show that the death-rate of Granada is just about double what it should be, and this in the circumstances is not surprising. Such a high death-rate must give a corresponding sick rate. If the people of Granada are indifferent to the immense amount of human suffering which this entails, and which could easily be prevented, then they might at least think of the cost, the loss in money that these unhealthy conditions cause. They are always complaining of their poverty and certainly a very large proportion of the inhabitants of Granada are professional beggars and nothing else, but with better health better work could be done, and also many more tourists and visitors would bring wealth to the town. As it is, travellers and pleasure seekers are afraid to go to Granada, and those who do get there visit the Alhambra as quickly as possible and then hurry away, deeming themselves lucky if they only suffer from a passing attack of diarrhœa as the natural punishment for their imprudence in going to such a place. In these circumstances it would pay well to protect the water-supply and to substitute iron mains for the present system of open canalisation and porous pottery which along the whole of its course is accessible to contamination.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Birmingham and Midland Eye Hospital.

THE annual report of this institution, which has just been issued, alludes with satisfaction to the improvements in the out-patient department and to the new operating room which has been found of great service by the medical staff. The subscriptions have slightly increased during the past year but the donations and legacies have fallen off. The total payments for the year amount to £7800 5*s*., an increase of £981 10*s*. 3*d*. compared with 1902. The total number of patients treated, exclusive of those on the books at the commencement of the year and exclusive of renewals, was 27,384, of whom 1022 were in-patients. The total number of attendances of out-patients was 65,394. No fewer than 731,345 patients have been admitted since the foundation of the hospital in 1823. A number of persons bringing out-patient tickets had been refused attendance on the ground that they were in a position to pay for advice. The committee expresses the hope that subscribers will endeavour to prevent the abuse of the benefits so liberally offered by the hospital. At the annual meeting of the subscribers to the hospital, the Lord Mayor, who presided, drew special attention to this part of the report. He was very sorry to see that the out-patient department was subject to abuse. It was, in his opinion, a great shame that any institution dependent upon public support should have to refuse cases in which patients were in a position to afford private treatment. That was one of the difficulties of the ticket system. It was the duty of the subscribers not only to give their subscriptions but also to see that the tickets were properly distributed. Under an ideal system they would not have tickets at all, but he feared that a great many subscribers would be apt to neglect the hospital if they were not constantly reminded of the usefulness of the institution by the demand for tickets.

The Birmingham Crematorium.

The new crematorium for Birmingham, occupying about an acre of ground in a country spot some distance from any dwelling-house and surrounded by trees, at Sheldon Coppice, near Rocky-lane, Perry Barr, is rapidly approaching completion and will be opened during the month of September by Sir Henry Thompson. The company which has provided it was founded in 1901 and Mr. F. B. Osborn was the architect. The chapel, which is approached by a gateway and drive from the main road, has a large porch or vestibule which is 50 feet by 25 feet and 40 feet high, with an open timbered roof. On one side are a vestry and registry office, with a separate entrance, and on the other side is a small mortuary chamber. The chapel is principally lighted by lofty clerestory windows and underneath these on both sides are recesses for the reception of urns containing the ashes of the dead. If relatives prefer it these urns can be placed in cloisters of ornamental design which they will be at liberty to erect in the grounds. The catafalque is placed at the end wall at the opposite side to the entrance and behind it is a window leading to the intermediary chamber. On the north-west side is a lofty ornamental tower, 80 feet in height, containing the stack. The temperature of the incinerating chamber will be about 2000° F.

Dinner to Dr. Alfred Hill, the Retiring Medical Officer of Health.

A dinner, at which an illuminated address was presented

to Dr. Hill by the Lord Mayor, was given last week by Alderman Cook, chairman of the health committee. A number of members of the council and officials, including Dr. J. Robertson, the new medical officer of health, were present. In proposing the health of the guest of the evening, Alderman Cook said that Dr. Hill might be said to have seen almost the birth—certainly the beginning of organisation on anything like an adequate scale—of the sanitary department. At first the committee was called the borough inspection committee. Later it became the sanitary committee and after the Public Health Act came into force the health committee. He (the chairman) entered the council in November, 1872, and Dr. Hill was appointed medical officer in the December following. Their connexion had, therefore, been long. In those days there were only eight health inspectors, now there were over 30. It went without saying that the sanitary state of the city in those days was far from good. The death-rate was over 25 per 1000 and there were thousands of middens poisoning the air, the total area of which was reckoned at that time at about 13 acres. Nothing worse could be imagined. They had got rid of nearly all those middens and they were going in for further improvements. Alderman Cook also alluded to Dr. Hill's connexion with the closing of the city wells, the building of the city hospital, and other incidents of his career.

Vaccination Fees.

The attention of the board of guardians has been called by one of its number to the great increase in the amount of the vaccination fees which has been one of the results of the Act of 1898. Prior to that Act any person wishing to be vaccinated free of cost had to apply at the vaccination station; now the vaccination officer has to call if the authorities receive a notification to that effect, and it seems that many persons who formerly employed the family practitioner for this purpose now save his fees by engaging the services of the public official. Taking the four years prior to the Act of 1898 becoming operative, it is found that the fees paid in respect of the parish of Birmingham were respectively as follows: 1896, £387; 1897, £361; 1898, £315; and 1899, £293; or an average of £346 per annum. That was on a scale whereby the guardians paid 2*s.* 6*d.* for each successful vaccination. Under the new Act an order was issued by the Local Government Board making the minimum payment 5*s.*, in addition to which the surgeon receives 1*s.* for the registration of every child—whether vaccinated or unvaccinated—born in the parish should the baby reach the age of four months. As a result the aggregate of fees, which had been steadily declining, has much increased, as will be seen from the following totals: 1900, £1132; 1901, £1164; 1902, £1154; and 1903 (the official year ends on March 31st), £1877. This gives a yearly average of £1333, as compared with £346 for the preceding four years—an increase of practically £1000 per annum. The board of guardians has on various occasions complained to the Local Government Board as to the amount of the fees and has been met with replies that the communications have been received. At their meeting on July 29th the guardians passed a resolution pointing out that they had for the past five years called the attention of the Local Government Board "to the very excessive sums they have been compelled to pay in fees to the vaccination surgeon" and emphatically protesting against "the indifference with which these protests and remonstrances have been treated by the officials of the Local Government Board." The clerk was instructed to send this resolution to the Board in question.

August 4th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Aberdare Valley Colliery Surgeons.

UNTIL about three years ago the colliery surgeons in the Aberdare Valley received 2*d.* in the pound of the colliers' earnings as payment for their services. This poundage was increased to 3*d.* upon the representation of the surgeons that their out-of-pocket expenses had very considerably increased, noticeably in connexion with the salaries of their assistants. Within the past few months an agitation has been going on among the men employed in the Aberaman and Cwmaman collieries having for its object the adoption of a new scheme of medical attendance and at public meetings held on July 20th definite proposals which had been drafted by a committee of the workmen were approved. There are at present three surgeons engaged under the poundage system and they pay the whole of the expenses of their practices. Under the new scheme it is proposed to engage one medical officer at a salary of £600 per annum and five assistants each at a yearly salary of £200. The committee is to defray all the expenses of the undertaking, including the supply of drugs and instruments, stable expenses, house rent and taxes, and expenses of management. During the year ending June 30th, 1901, the poundage produced £4668 and it is estimated that under the altered conditions there will be a saving of £1500 or £2000, which sum it is intended to use in the maintenance of a cottage hospital. The scheme upon paper appears to work out well, but there are so many objections to its practical working that it is a little surprising to find it meeting with the approval of some of the leaders among the workmen. First of all the estimate of income is based upon the earnings of the men when wages were high and it is very doubtful whether this estimate will be maintained in the future; while a strike of any considerable duration would ruin the scheme. During the strike of 1898 for nearly six months many surgeons did not receive any payment at all from the colliers, although their surgery and other expenses were still going on and they continued to attend their patients. The proposal to employ assistants in place of some of the present surgeons is hardly likely to be satisfactory, if for no other reason than the constant change which will be taking place. A really satisfactory and competent assistant will not stay very long in a colliery district at a salary of £200 per annum when he can earn quite as much as, or even more, in a locality having pleasanter social and physical surroundings. Lastly, there is the question of the engagement and control of the assistants. If they are engaged by the committee of workmen difficulties of the gravest character will arise and the men may one day find the machinery of their medical service at a standstill. It would be interesting to know what the wives of the colliers think of the proposed alteration.

Butchers and Tuberculous Meat.

The butchers and cattle dealers of Cardiff, Swansea, and the surrounding districts are endeavouring to arrange a scheme whereby after a certain date no cattle above a given value shall be purchased either by auction or privately unless such cattle are warranted by the vendors free from tuberculosis. At a conference of butchers held at Cardiff on July 27th a committee of butchers, farmers, auctioneers, and cattle dealers was formed and a resolution was referred to them expressing the opinion that all cattle of not less value than £8 per head, calves and pigs of £1 10*s.*, and sheep of £1 sold in Glamorganshire or Monmouthshire should be guaranteed by the vendor free from disease. It was stated by one speaker that a large firm of Newport cattle dealers had instituted a system of insurance and during the past three years had paid £300 in compensation for cattle which had been sold by them and were ultimately found to be unfit for food.

Duties of a Workhouse Medical Officer.

An inquest was recently held on an old man who had died in the Newton Abbot (Devon) workhouse on a Sunday and the board of guardians at their meeting, which took place on July 30th, were informed that the jury considered that the guardians should request their medical officer to visit the workhouse on Sundays in future. It was explained at the meeting that in such matters it was left to the discretion of the superintendent nurse to telephone to the medical officer if his attendance on that day was required and that there was not the slightest reason for him to visit in this instance, as the patient died from exhaustion due to old age. The guardians eventually resolved unanimously to let the communication lie on the table.

August 3rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal University of Ireland.

AT a meeting of the Senate of the Royal University of Ireland held on July 31st it was unanimously resolved, on the motion of Sir Christopher J. Nixon, M.D., to admit

the veterinary profession to university status, subject, of course, to students fulfilling all the requirements as regards curriculum and examinations.

The Recent Epidemic of Small-pox in Dublin.

The small-pox epidemic has now completely disappeared from Dublin. The isolation hospital at the Pigeon House Fort has been evacuated and the convalescent patients at Bencavin will soon be discharged. Since the end of January 260 patients have been treated and there have been 34 deaths. The citizens have good reason to feel thankful that the disease has left them after six months instead of after its usual sojourn of years—this, moreover, notwithstanding the long delay and difficulty in obtaining an isolation hospital. It occurs to me that the lesson to be gathered from the happily short history of this outbreak is worth remembering, for it points with no doubtful finger to the prepotent efficacy of vaccination. Other means are valuable but Jenner's remedy remains, *longo intervallo*, easily the chief. It has of late years and recently been widely availed of in Dublin where the anti-vaccinationist is unknown and where accordingly a large amount of variolous immunity always prevails. Its value as a defence was clearly evident in this outbreak. Of the 260 patients who suffered not one proved to have been revaccinated and the entirely casualty list was practically supplied from unvaccinated patients. Vaccination really saved the situation and no unprejudiced observer can doubt in that regard the value of the enlightened advice of Dr. Walsh, the Roman Catholic archbishop, repeated every week to the ignorant poor of Dublin from pulpits in the city.

The Irish Medical Association and the Local Government Board.

The generous support which the medical profession and the Irish Medical Association have recently given to the claims of the Poor-law medical officers of Ireland has emboldened them to try to improve their position by means of parliamentary action. The Irish members of Parliament, however, have apparently failed to accomplish much for them. On July 30th Mr. Patrick O'Brien asked the Chief Secretary for Ireland whether he was aware that the Ballinasloe board of guardians had failed to procure a medical officer for the Killan dispensary district at a salary of £120 per annum; whether he could say if any medical men stated to that board in writing at what salary they would be willing to accept office, and, if so, at what amount; and whether he could say how many vacancies existed at present in the Irish dispensary service and for what period each district had been vacant, what fees were being paid per week to the temporary medical officers in charge of these districts, how much per week was paid in advertising the vacancies in each union, and how much of the total cost of locum-tenents' fees and advertisements was refunded by the Treasury to the guardians in each case. Mr. Wyndham replied that the vacancy in Ballinasloe union was created on June 20th. The guardians advertised for a medical officer at a salary of £120 a year. Two gentlemen offered their services at £200 a year. The guardians, however, decided to re-advertise at the former salary. There are eight other vacancies; two occurred in November last and the remaining six are of very recent creation. In reply to a further question by Mr. Delany as to whether those vacancies were caused by intimidation exercised by the Irish Medical Association the Chief Secretary made the following significant remarks:—

> I do not know that intimidation is the proper word. There have, however, been speeches made and resolutions passed suggesting that medical gentlemen should not accept appointments at less than £200 a year. I know that medical officers in Ireland have a great deal of work to perform and that their salaries are not high, but for all that I think their claims would be more deserving of recognition if they abandoned such practices and awaited the report of the Vice-regal Commission which is looking into the amalgamation of unions and other Poor-law questions.

In THE LANCET of August 1st, under the heading "Parliamentary Intelligence" another question from Mr. Delany with the Chief Secretary's reply was reported. In reference to that case a special meeting of the Tullamore board of guardians was held on July 28th when the following letter was read from the Local Government Board:—

> With reference to the resolution of the Tullamore board of guardians of July 14th, the Local Government Board desire to state that the guardians should call on Dr. McCarthy to take up the duties of medical officer of Killoughey dispensary district. In the event of Dr. McCarthy refusing to do so the Local Government Board will direct a sworn investigation into the circumstances with a view to his removal from office by an order under seal.

Dr. McCarthy was accordingly called upon to take up the duties of the dispensary district. The chairman said that the trouble had now reached an interesting stage. After three attempts Dr. McCarthy was appointed but owing to the action of the Irish Medical Association he was intimidated from taking up the position. If he was now dismissed under seal he could never get any position under the Local Government Board of Ireland. It is obvious that the Irish Medical Association, with the eminent members of the medical procession connected with it, has now in its campaign in favour of the Irish union medical officers not alone the guardians to deal with but the Local Government Board as well, headed by the Chief Secretary for Ireland, who is of course its president.

Visit of the King and Queen to Cork.

Their Majesties the King and Queen visited Cork on August 1st and received a most enthusiastic reception. Addresses were presented by the corporate body of the Queen's College, by the Cork branch of the National Association for the Prevention of Consumption, and by the Cork Medical and Surgical Society. The College address having referred to the fact that the College was founded under the auspices of the late Queen Victoria went on to say, "And we confidently anticipate that under your Majesty's gracious favour it will continue to diffuse the light of learning throughout the province for the special benefit of which it has been established." The address from the Cork branch of the National Association for the Prevention of Consumption contained the following paragraph: "We are aware that the association which we represent owes its existence mainly, if not entirely, to the interest which your Majesty has unceasingly displayed in the welfare of your subjects by promoting the scientific and successful treatment of diseases which have been so long accepted as incurable." In the address from the Cork Medical and Surgical Society the following paragraph occurs: "As members of the medical profession we have been deeply interested in your philanthropic efforts to secure the better housing of the poor and to arrest the terrible destruction of human life caused by the ravages of tuberculosis and cancer. It also affords us much pleasure to know that Her Most Gracious Majesty the Queen is equally interested in all movements to eradicate disease and to alleviate suffering and misery." I ventured to prophesy some weeks ago that Their Majesties would receive a very hearty greeting in Cork because it was well known that His Majesty takes a deep personal interest in the people of this country and I am happy to be able to state that my anticipations have been entirely realised. Along the line of the Royal procession bunting was exhibited from nearly every window and handsome festoons stretched across the streets. All was brightness and colour and the cheering of the vast crowds afforded undeniable proof of the popular feeling. When driving through one of the principal streets it was noticed that the Queen directed His Majesty's attention to an inscription on one of the banners—"Welcome King Edward the Peace-Maker." The King smiled and was evidently pleased with the sentiment. Indeed, His Majesty repeatedly showed his high appreciation of the kindly feelings exhibited towards him and never lost an opportunity of expressing his ardent desire to make the people of Ireland happy, prosperous, and contented. The universal opinion entertained in Cork to-day is that King Edward the VII. by his tact, and especially by his kindliness of manner and desire to do good, has done much to secure that "union of hearts" which is so much to be desired in the interests of both countries.

The Belfast Workhouse.

In his half-yearly report Mr. Agnew, the Local Government Board inspector, recommended that a day nurse should be provided for patients in the female lock ward and that some effort should be made to supply an examination-room for gynæcological cases apart by itself. More baths were needed, he said, and the hope was expressed that the guardians might succeed in carrying out their laudable purpose of promoting a scheme for the modern treatment and complete isolation of consumptive patients. Mr. Agnew suggested that a sufficient addition be made to the nursing staff to enable the guardians to dispense entirely with pauper attendants, and he said that the medical, surgical, and nursing staff were zealous and skilled in the performance of their duties and that the patients were treated with every kindness and consideration. The board

of guardians had decided to defer its reply to the letter of the Local Government Board inclosing the report.

August 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Institute of Legal Medicine and Mental Diseases.

THE Minister of Public Instruction by a decree dated June 22nd has approved of the resolution of the council of the Paris Faculty of Medicine relative to the creation and organisation in connexion with this faculty of an Institute of Legal Medicine and of Mental Diseases. The object of this institute is to give a theoretical and practical training to medical men and medical students, both French and foreign, who intend to practise as experts before the courts. A medical man or medical student, either French or foreign, who has gone through the course prescribed by the new institute and has passed a trial examination will receive a special diploma. A certificate of diligence will be given to foreign medical men and medical students who do not wish to undergo the trial examination. The new institute will be under the direction of the dean of the faculty of medicine, of the professor of legal medicine, and of the professor of the Clinique of Mental Diseases. The course of training will be divided into two portions: (*a*) a medico-legal training properly so-called and (*b*) a course of training in mental diseases from the medico-legal side. The training in regular medico-legal subjects will be under the direction of the professor of forensic medicine, who will take it in hand as a portion of the work attached to the chair of forensic medicine, together with (1) the *agrégés libres*; (2) the assistant director of the laboratory of toxicology; and (3) the assistance of the heads of the departments of anatomy and histology in connexion with forensic medicine. The course of training will include (*a*) a theoretical part and (*b*) a practical part. The theoretical part includes a complete course in forensic medicine. This course will be undertaken by the *agrégés libres* in connexion with the chair of forensic medicine and by the assistant director of the laboratory of toxicology. The practical part will include (1) the making of post-mortem examinations and the examination of living subjects with special regard to forensic medicine; and (2) microscopical, chemical, and physiological studies in so far as regards forensic medicine. This training will be given by the professor of forensic medicine, the *agrégés libres* in connexion with the chair of forensic medicine, and the heads of the various departments. The training in forensic medicine proper, both practical and theoretical, will be carried on for the whole of the duration of the stage of instruction—that is to say, during two terms of six months each. The medico-legal training in mental diseases will be under the direction of the professor of the Clinique of Mental Diseases who will give it (1) with the assistance of the *agrégés libres* and in connexion with the chair of mental diseases; (2) with the assistance of the medical instruction given by the medical officer of the infirmary attached to the depôt of the Prefecture of Police; and (3) with the assistance of the head of the clinique attached to the chair of mental diseases. The course of training comprises (*a*) a theoretical part and (*b*) a practical part. The theoretical part includes a complete course of instruction in mental diseases and in forensic medicine so far as regards mental diseases. This course of instruction will last during the first six months of the period of training and will be given by the *agrégés libres* in connexion with the chair of the Clinique of Mental Diseases and by the heads of the various departments in this clinic. The practical part will include (1) lessons and clinical demonstrations in mental diseases, which will be undertaken by the professor of the chair during the two periods of six months each during which the instruction lasts; and (2) clinical demonstrations in forensic medicine so far as regards mental diseases, which will be given during the second part of six months by the medical men attached to the special infirmary connected with the Prefecture of Police.

Obituary.

Professor Nocard of the School of Alfort, the eminent bacteriologist, who was one of Pasteur's colleagues at the commencement of the latter's investigations into the nature of serums, has just died at the age of 53 years after a short illness. He was born at Provins on Jan. 29th, 1850, and studied at the Alfort School, of which in 1878 he became *chef de service*. In the following year he was nominated to the chair of animal contagious pathology and sanitary police. In 1889 he was nominated as director of the whole establishment and held this post for many years until he gave it up in order to devote himself entirely to clinical research in the laboratory. He became in succession member of the Central Society of Veterinary Surgeons, of the Committee of Epizoötic Diseases, of the Committee of Hygiene of the Seine, and finally a member of the Academy of Medicine. In 1886 Professor Nocard became numbered among the most eminent bacteriologists owing to the results of the scientific investigation which, at the invitation of Pasteur, he undertook with Roux, Straus, and Thuiller, by the discovery which he then made of the microbe of farcy in the ox and of the bacillus of contagious mammitis in horned animals, especially in milk-giving cows. He also made researches in the nature of glanders (*morve*) and many other acute contagious maladies, especially pneumonia and anthous fever. It is easy to recall his controversy with Koch, the German bacteriologist, in opposition to whom he, relying on his French experiments, maintained that it was possible to infect bovine animals with tuberculous matter taken from men. These statements refute in great part the theories of Koch as to the propagation of tuberculosis in man by milk or flesh of animals.

August 4th.

Medical News.

UNIVERSITY OF EDINBURGH.—The following degrees and certificate have been conferred:—

Doctor of Medicine.—*Arthur Leonard Anderson, New Zealand, M.B., C.M., 1894; Francis Thomas Auden, England, M.B., C.M., 1891 (*in absentiâ*); †William John Barclay, B.A., New Zealand, M.B., Ch.B. (with first-class honours), 1899; ‡James Brunton Blaikie, Scotland, M.B., C.M., 1896; James Blyth, Scotland, M.B., C.M., 1893; Douglas John Mayhew Bone, England, M.B., C.M., 1887; Robert Tennant Bruce, Scotland, M.B., C.M., 1894; *Archibald Fawns Cameron, M.A., Scotland, M.B., C.M., 1896; Bertram Joseph Courtney, England, M.B., Ch.B., 1899; ‡Leonard Crossley, England, M.B., Ch.B., 1900; †John M'Ewen Dalziel, Scotland, M.B., C.M., 1895; ‡Horatius Bonar Dobbs, Scotland, M.B., Ch.B., 1900; ‡Owen John Evans, Wales, M.B., Ch.B., 1901; ‡Hugh Faulkner, Ireland, M.B., Ch.B., 1899; ‡Robert Mylcrame Freer, England, M.B., C.M., 1894; Arthur William Fuller, England, M.B., Ch.B., 1900; ‡James John Galbraith, Scotland, M.B., Ch.B. (with second class honours), 1899; ‡Andrew Gilmour, Scotland, M.B., Ch.B., 1898; Thomas Parker Greenwood, B.Sc., England, M.B., C.M., 1897; ‡Alfred Hume Griffith, England, M.B., Ch.B., 1899; Francis Alexander Hardy, England, M.B., C.M., 1898; ‡Herbert Harris, England, M.B., Ch.B., 1900; ‡John Henderson, Ireland, M.B., C.M., 1897; †Thomson Henderson, Scotland, M.B., Ch.B., 1900; Albert Lewis Husband, England, M.B., C.M. (with second-class honours), 1895; William Roy Jackson, M.A., Scotland, M.B., C.M., 1893; ‡William Ernest Jennings India, M.B., C.M., 1887; William James Bennett Jones, Wales, M.B., Ch.B., 1899; Francis Ferguson Kerr, Canada, M.B., C.M., 1898; †Leslie Kingsford, New Zealand, M.B., C.M. (with second-class honours), 1897; John Dickinson Leigh, England, M.B., C.M., 1886; Patrick Alexander Leighton, Scotland, M.B., Ch.B., 1896; George Herbert Lewis, Wales, M.B., Ch.B., 1900; Thomas Hillhouse Livingstone, England, M.B., Ch.B., 1899; *George Lyon, Scotland, M.B., Ch.B. (with first-class honours), 1899; ‡Duncan Matheson Mackay, England, M.B., C.M., 1896; ‡John William MacKenzie, Scotland, M.B., Ch.B., 1898; ‡Arthur Hutton M'Shine, Trinidad, M.B., C.M., 1901; ‡Arthur Anderson Martin, New Zealand, M.B., Ch.B. (with second-class honours), 1900 (*in absentiâ*); Frederick Crichton Matthew, M.A., Scotland, M.B., Ch.B., 1900; ‡William Walker Maxwell, England, M.B., Ch.B., 1898; ‡Frederick Norton Menzies, Wales, M.B., Ch.B., 1899; Philip Ernest Millard, England, M.B., Ch.B., 1898; *James Miller, B.Sc., Scotland, M.B., Ch.B. (with second-class honours), 1899; James Ramsay Munro, England, M.B., Ch.B., 1899; John Nightingale, England, M.B., C.M., 1888; Alexander Spalding Mackie Peebles, Scotland, M.B., Ch.B., 1899; *Howard George Pesel, England, M.B., Ch.B., 1901; Reginald Ogilvy Petrie, M.A., Scotland, M.B., C.M., 1892; Ernest Edward Porritt, New Zealand, M.B., C.M., 1896 (*in absentiâ*); Sydney Clifford Pritchard, England, M.B., Ch.B., 1899; Alexander Mair Rattray, Scotland, M.B., C.M., 1897; ‡Matthew Burrow Ray, England, M.B., C.M., 1899; ‡James Martin Reid, Scotland, M.B., Ch.B., 1899; Hugh Richardson, Scotland, M.B., C.M., 1886; Griffith Lloyd Roberts, Wales, M.B., C.M., 1896; John Alexander Robertson, Scotland, M.B., C.M., 1890 (*in absentiâ*); Lauchlan Rose, M.A., Scotland, M.B., C.M., 1894; ‡Laura Stewart Sanderman, Scotland, M.B., Ch.B., 1900; Kenneth MacKenzie Scott, England, M.B., C.M., 1897; Thomas Redpath Scott Sibbald, Scotland, M.B., C.M., 1894; †Frederick David Simpson, Scotland, M.B., Ch.B., 1900; ‡George Smith Small, Scotland, M.B., C.M., 1896; Henry Langlands Spark, Scotland, M.B., Ch.B., 1901; ‡Walter Henry Swaffield, England, M.B., C.M., 1901; ‡Harry Muse Traquair, Scotland, M.B., C.M. (with first-class honours), 1901; Edward James Tyrell, Scotland, M.B., Ch.B., 1901; Ernest Edwin Waters, England, M.B., C.M., 1893 (*in absentiâ*); ‡John William Wells, England, M.B., C.M., 1887; Arthur Edward White, England, M.B., C.M., 1896; ‡Richard Henry Auglin Whitelocke, Jamaica, M.B., C.M. (with second-class

honours), 1894; Lewis Arthur Williams, England, M.B., C.M., 1898; and Hector Douglas Wilson, Australia, M.B., Ch.B., 1899.

* Awarded gold medals for their theses.
† Highly commended for their theses.
‡ Commended for their theses.

Bachelor of Medicine and Master in Surgery.—Margaret Ida Balfour, Scotland; and William Herbert Winstanley, England.

Bachelor of Medicine and Bachelor of Surgery.—Daniel Allison, Scotland; (John Allan Anderson, Scotland; Frank Lockwood Atkinson, M.A., England; Charles Mackie Begg, New Zealand; William Frederick Brayne, B.A., England; Edith Cochrane Brown, Scotland; George Llewellyn Brunton, Scotland; George Macqueen Brunton, Scotland; Angus Buchanan, Scotland; Samuel Burns, M.A., Scotland; Henry Caird, Scotland; Thomas Pearson Caverhill, Scotland; Katharine Jane Stark Clark, Scotland; Elizabeth Lucy Colby, B.A., England; Charles Hawkins Craig, Scotland; Robert William Craig, Scotland; Crawford Smith Crichton, Scotland; David M'Kenzie Crooks, Jamaica; David Halliday Croom, B.A., Scotland; Henry Curwen, Scotland; John May Darling, M.A., Scotland; §Hugh Stevenson Davidson, Scotland; James Davidson, Scotland; William Henderson Davison, Ireland; Douglas Erith Derry, England; Arthur Cecil Devereux, England; John Robson Dobbin, Ireland; James Donaldson, M.A., Scotland; Clement Edgar Dumanoire, Trinidad; Alice Mary Ebden, England; Gilbert John Farie, Scotland; Hugh Nethersole Fletcher, England; John Fortune, Scotland; §Cameron Robertson Gibson, M.A., Scotland; John Dudgeon Giles, Scotland; James Girdwood, M.A., Scotland; John Morley Glasse, Scotland; Wilbert Goodchild, England; Reginald Glegg Gordon, Scotland; Alexander Gray, M.A., LL.B., Scotland; Elizabeth Catherine Gunn, New Zealand; Annie Mabel Gurney, England; Howard Walter Gush, England; §Andrew Alexander Hall, M.A., Scotland; Francis Margaret Harper, Scotland; Garnet Wilson Harty, New Zealand; George Henderson, M.A., Scotland; Ronald Lennox Henderson, Australia; Albert Ernest Hodgson, England; Richard Brassey Hole, Scotland; Alfred Oswald Hooper, England; Arthur Hutley, England; Isaac Ivey, India; Bertha Jex Blake, England; John Macpherson Johnston, Scotland; Robert William Johnstone, M.A., Scotland; John Hunter Kay, Scotland; James William Keay, Scotland; Ivan Cochrane Kelr, England; (James Mathieson Kirkness, Scotland; (Lewis Albert Hodgkinson Lack, Trinidad; Walter Scott Laidlaw, Scotland; Frederick Thomas Churchill Linton, M.A., Scotland; Alexander Lundie, B.Sc., Scotland; Francis William Lundie, Cape Colony; Henry MacCormac, Ireland; John Robertson M'George, Cape Colony; Gordon Stuart Mackay, Scotland; Marion Ellen Mackenzie, Scotland; Clara Violet M'Laren, Scotland; William MacLaren, Scotland; John James M'Millan, Scotland; John Bennett M'Neill, Scotland; Ian Macpherson Macrae, Scotland; Richard Manwaring Manwaring White, England; Henry Cooke Martin, Ireland; Alfred Sutton Millard, B.Sc., England; George Herbert Stephen Milln, Scotland; Charles Robert Paterson Mitchell, Scotland; Anthony Maurice Moll, Orange River Colony; §William Cuthbert Morton, M.A., Trinidad; Ernest Muir, Scotland; Charles Herold Muller, Cape Colony; Hugh Lennox Munro, Scotland; David M'Kenzie Newton, Scotland; William Harwood Nutt, England; Claude O'Flaherty, Ireland; David Edward Stanford Park, England; David Duncan Paton, M.A., Scotland; Thomas Peebles, Scotland; John Alexander Pottinger, Scotland; Julia Letitia Pringle, Scotland; Walter Llewellyn Prichard, England; Arthur Meurig Pryce, Wales; William Readman, England; Eva Anne Robertson, Scotland; William Sibbald Robertson, Scotland; Amy Robinson, England; Leslie Charles Robinson, Ireland; James Alexander Ross, M.A., Scotland; Mabel Ross, Scotland; Johannes Andreas Roux, B.A., Cape Colony; Norman Cecil Rutherford, England; William Sanderson, Scotland; (David Jobson Scott, Scotland; Duncan Gordon Addison Scott, Scotland; John Easton Scott, M.A., England; Meurice Sinclair, India; George William Robert Skene, England; §Grahame Howie Skinner, Scotland; John Henderson Smith, B.A., Scotland; Sydney Watson Smith, Scotland; (Eva Maud Snowball, England; Henry Speirs, Scotland; Francis Henry Stirling, Scotland; Amelia Sutcliffe, England; §John Tait, B.Sc., Scotland; James Ewen Taylor, Scotland; Johannes Petrus du Toit, Cape Colony; Louis Turiansky, Scotland; Robert Veitch, Scotland; William Richard Spencer Watkins, Wales; George Jacobus Wentzel, Cape Colony; David Herman Wessels, South Africa; Leonard West, England; George Wight, Scotland; William Young Woodburn, Australia; William Dundas Wright, England; and Gerald William Young, England.

§ Passed with first-class honours.
‖ Passed with second-class honours.

Special University Certificate in Diseases of Tropical Climates.—Daniel Allison, M.B., Ch.B.; Alexander Kidd Baxter, M.B., Ch.B. (*in absentiâ*); Nina Henrietta Beath, M.B., Ch.B.; Edith Cochrane Brown, M.B., Ch.B.; Angus Buchanan, M.B., Ch.B.; Henry Caird, M.B., Ch.B.; Katharine Jane Stark Clark, M.B., Ch.B.; Crawford Smith Crichton, M.B., Ch.B.; David M'Kenzie Crooks, M.B., Ch.B.; James Davidson, M.B., Ch.B.; Frank Inglis Dawson, M.B., Ch.B.; William Elliot Carnegie Dickson, B.Sc., M.B., Ch.B.; Horatius Bonar Dodds, M.D., Ch.B.; Alexander Leonard Duke, M.B., C.M.; Clement Edgar Dumanoire, M.B., Ch.B.; John Fortune, M.B., Ch.B.; Agnes Josephine Gardiner, M.B., Ch.B.; Reginald Glegg Gordon, M.B., Ch.B.; Philip Gray-Marshall, L.R.C.P. & S. (*in absentiâ*); Frances Margaret Harper, M.B., Ch.B.; Alexander William Montgomery Harvey, M.B., Ch.B.; John Macpherson Johnson, M.B., Ch.B.; James Mathieson Kirkness, M.B., Ch.B.; Alexander Lundie, B.Sc., M.B., Ch.B.; William MacLaren, M.B., Ch.B.; John Alexander Pottinger, M.B., Ch.B.; Eva Anne Robertson, M.B., Ch.B.; Amy Robinson, M.B., Ch.B.; Mabel Ross, M.B., Ch.B.; William Sanderson, M.B., Ch.B.; Grahame Howie Skinner, M.B., Ch.B.; Eva Maud Snowball, M.B., Ch.B.; Henry Speirs, M.B., Ch.B.; Elbert Lucas Steyn, M.B., Ch.B.; Arthur Clarence Turner, L.R.C.P. & S. (*in absentiâ*); and Robert Veitch, M.B. Ch.B.

UNIVERSITY OF BRUSSELS.—The following is a list of English candidates who were successful at the June examination for the degree of Doctor in Medicine:—

Edward Cullinan, M.R.C.S., L.R.C.P. Lond., Westminster Hospital; Richenda Gillett, L.S.A. Lond., Royal Free Hospital; *Ernest C. Lambert, M.R.C.S., L.R.C.P. Lond., Westminster Hospital; James C. McWalter, M.A., L.R.C.S.I., F.F.P.S. Glasg., D.P.H., Catholic University, Dublin; Cecil E. J. Philippson, F.R.C.S., Cape Town; and *George Sowden, M.R.C.S., L.R.C.P. Lond., D.P.H. Cantab., London Hospital.

* Passed with honours.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Ludwig Blumreich has been recognised as *privat-docent* of Gynæcology, Dr. Richard Cassirer as *privat-docent* of Nervous Diseases, and Dr. Wilhelm Stoeltzner as *privat-docent* of Children's Diseases.—*Budapest:* Dr. F. Reuss has been appointed Lecturer on the Biology of the Nervous System.—*Erlangen:* The chair of Medicine recently held by Professor Penzoldt has been filled by the appointment of Professor Fritz; in consequence of Professor von Strümpell's removal to Breslau Professor Ernst Graser has been appointed Director of the University Hospital.—*Halle:* The chair of Psychiatry having been declined by Dr. O. Binswanger has now been offered to Professor Ziehen of Utrecht.—*Heidelberg:* Dr. Otto Cohnheim, *privat-docent* of Physiology, a son of the late Professor Cohnheim, has been promoted to an Extraordinary Professorship.—*Leipsic:* Dr. F. Rolly has been recognised as *privat-docent* of Internal Medicine. Dr. Risel has been appointed Prosector to the Pathological Institute in succession to the late Professor Saxer.—*Prague (German University):* Dr. Josef Langer has been recognised as *privat-docent* of Children's Diseases.—*St. Louis:* Dr. Hugo Ehrenfest, who has been operator in the Vienna Gynæcological Clinic under Professor Schauta, has been appointed Instructor in Obstetrics.—*Strasburg:* Dr. Ulrich Rose has been recognised as *privat-docent* of Medicine.—*Vienna:* Dr. Stefan Weidenfeld has been recognised as *privat-docent* of Dermatology and Syphilis; Professor Albert Neisser of Breslau has been selected for the offer of the chair of Dermatology, which is being vacated by the retirement of Professor Isidor Neumann.—*Würzburg:* Dr. A. Schmincke has been appointed Prosector to the Institute of Comparative Anatomy.

QUEEN CHARLOTTE'S HOSPITAL.—Viscount Portman, the President of Queen Charlotte's Hospital, took the chair on July 23rd, at a meeting held at his house, 22, Portman-square, on behalf of this hospital. In consequence of the great increase in the work of the charity it has been decided to enlarge the Nurses' Home at a cost of £2000. Lord Hardwicke, the chairman of the committee of management, wrote regretting his inability to be present and stating that the in-patients had increased from 692 in 1882 to 972 in 1892, and 1271 in 1902, while during the first six months of the present year the number was 722. The Bishop of Kensington moved—

That this meeting of governors and friends of Queen Charlotte's Hospital desires to express its continued interest in the charity and having regard to its great and growing work to commend to public support the efforts now being made by the committee to provide the further increased accommodation necessary for patients and nurses, and to obtain the additional funds needed for maintenance.

The motion was seconded by Lieutenant-General Lowry and carried.—Mr. H. A. Harben moved:—

That the work in which the Midwifery Training School has been engaged for many years past in training medical pupils, midwives for the poor, and monthly nurses is one of great importance in the interests of all classes of the community, and constitutes a high claim to the support of the public.

Dr. W. Rivers Pollock, in seconding the motion, stated that Queen Charlotte's Hospital was the largest lying-in hospital in Great Britain and that it offered exceptional facilities to medical students and qualified practitioners in obtaining a knowledge of practical midwifery and of the treatment of very young infants. The motion was carried and a vote of thanks to Lord Portman for kindly lending his house for the meeting and for presiding brought the proceedings to a close.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—On July 21st Dr. R. Roxburgh, president of the Weston-super-Mare Philharmonic Society, was presented with a silver-mounted writer's companion, together with an illuminated address expressing the respect and esteem of the members for one who has for many years occupied the presidential chair of the society.—On July 15th Dr. J. H. Stowers was presented by his colleagues at the North-West London Hospital with a silver salver, the inscription on which explained that it was given "as a token of friendship and

in recognition of 17 years' service as honorary secretary to the medical committee."—On July 29th Dr. C. A. Hayman was presented with a silver cigar case in recognition of his work in connexion with the Bristol Corps of the St. John Ambulance Brigade. Mrs. Hayman was also presented with a silver jewel-box.

KINGSBRIDGE COTTAGE HOSPITAL.—The annual meeting of the subscribers of the Kingsbridge (Devon) Cottage Hospital was held on July 22nd. During the past year the new wing of the building, which has been erected by Mrs. Berks, was opened. It contains a male ward and female ward, each for three beds, and an operation-room. During the past 12 months 39 in-patients were admitted. There was a favourable balance of £13 remaining, which may not seem a great sum, but it is always pleasant to chronicle a surplus, however modest.

MÜLLER'S ORPHAN HOUSES.—The report of Müller's Orphanage at Bristol has just been issued and shows that the institution has now entered on its seventieth year of existence. During 1902 the sum of £37,013 was received for the orphans and £4778 for other work in connexion with the institution. Five years have now passed since George Müller died and there has been no sort of organised or direct appeal to the public or any individual for subscriptions, and yet every agency has been efficiently maintained. The report alluded to the resignation of Dr. Eubulus Williams, who has been physician to the orphanage for the past 34 years, and adds that Dr. C. O. Bodman has been appointed to the post thus rendered vacant.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.—During the last 12 months there has been a slight decrease in the number of specimens examined in the Bacteriological Diagnosis Department of the University of Durham College of Medicine, Newcastle-upon-Tyne. Some of these examinations have been made for medical practitioners, others by special arrangements for the county councils of Northumberland and Durham, the Guisborough combined district councils of the North Riding of Yorkshire, the town councils of Sunderland and West Hartlepool, the Newcastle Royal Infirmary, and other public institutions. The total number of specimens examined in the laboratory during the year ending May 31st, 1903, amounts to 938, as compared with 1009 during the preceding 12 months. The different kinds of examinations carried out were as follows: 513 samples of sputum from suspected cases of phthisis were examined for tubercle bacilli, which were found in 218 cases; 101 specimens of blood were examined from suspected cases of enteric fever by Widal's method, a positive result being obtained in 44 cases; 205 swabs from suspected cases of diphtheria were examined for the bacilli, which were found in 66 specimens; ten specimens of pus were examined, the pneumococcus being found in two, streptococcus pyogenes in three, staphylococcus pyogenes aureus in four, and the gonococcus in one; tubercle bacilli were found in one specimen of urine and in one of faeces; eight specimens of anthrax were examined, positive results being obtained in four; and 50 samples of water were examined quantitatively for bacteria.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, JULY 30TH.

Cholera at Quetta.

MR. SCHWANN asked the Secretary of State for India whether any report had been received from the chief medical officer at Quetta or through the political department at Simla regarding the outbreak of typhus fever amongst the workmen on the Nushki-Seistan railway route and of cases of cholera at Quetta, and whether a report could be presented showing what progress had been made with the earthwork on that desert route, and describing the sanitary conditions and the question as to water-supply that were likely to affect the construction of the line and the future facilities for traffic such as the Nushki-Seistan railway was intended to offer.—LORD GEORGE HAMILTON: A railway is being constructed from Quetta to Nushki but no proposal for its extension from Nushki towards Seistan has been made or sanctioned. I have no information as to the prevalence of epidemics among the workers on the Quetta Nushki Railway but I have heard that there is an epidemic of typhus fever at Quetta and in other parts of Baluchistan. Cholera is also reported near Quetta and at Nushki.

Ambulances in Hyde Park.

MR. CLAUDE HAY asked the hon. Member for West Derbyshire, as representing the First Commissioner of Works, whether the St. John ambulances in Hyde Park have been decided upon as being as satisfactory as the Metropolitan Police ambulances in Hyde Park, and whether he would state the result of the promised inquiry as to the number and positions of ambulances which were placed in Hyde Park, having regard to recent accidents to horsemen and others.—MR. VICTOR CAVENDISH: The St. John ambulances in Hyde Park have been inspected by Sir William Bennett who reports that they are not quite so satisfactory as the Metropolitan Police ambulances, but owing to their lightness and simplicity they are best suited for the purposes of work in Hyde Park. There are now ambulances at Alexandra Gate, Hyde Park Corner, the Marble Arch, and at the police station.

Medical Officers in Ireland.

MR. PATRICK O'BRIEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the Ballinasloe board of guardians had failed to procure a medical officer for the Kilian dispensary district at the salary of £120 per annum; whether he could say if any medical men had stated to that board in writing at what salary they would be willing to accept office, and, if so, at what amount; and whether he could say how many vacancies existed at present in the Irish dispensary service and for what period each district had been vacant, what fees were being paid per week to the temporary medical officers in charge of these districts, how much per week was paid in advertising the vacancies in each union, and how much of the total cost of locum-tenents' fees and advertisements was refunded by the Treasury to the guardians in each case.—MR. WYNDHAM: The vacancy in Ballinasloe union was created on June 20th. The guardians advertised for a medical officer at a salary of £120 a year. Two gentlemen offered their services at £200 a year. The guardians, however, decided to re-advertise at the former salary. There are eight other vacancies; two occurred in November last and the remaining six are of very recent creation. Temporary medical officers are usually paid £4 4s. a week. The cost of advertisements is not officially known. Recoupment is made in respect only of approved salary.

Haffkine's Plague Prophylactic.

MR. WEIR asked the Secretary of State for the Colonies whether he would state on what date the system of inoculation with Haffkine's plague prophylactic was brought into operation in Hong-Kong, the number of persons inoculated, and how many have since succumbed to plague.—MR. CHAMBERLAIN: I have no information on the point but will ask the Governor for a report.

MONDAY, AUGUST 3RD.

Medical Reports.

MR. D. A. THOMAS asked the President of the Local Government Board when the sixty-fourth annual report (births, deaths, and marriages (England)) of the Registrar-General for 1901, presented on August 4th, 1902, and when the supplement to the thirty-first annual report of the Local Government Board, 1901-02, containing the report of the medical officer for 1901-02, presented Nov. 3rd, 1902, would be delivered; whether he could say what had been the cause of the delay in the publication of these reports; and whether he would take steps to alter the practice of presenting command papers in dummy form in one session when not ready and not delivering them until the next in view of the inconvenience involved.—MR. LOWE replied: As regards the annual report of the Registrar-General, I am informed that it will be issued with very little further delay. The Registrar-General states that the report has been delayed exceptionally this year on account of the heavy pressure in his office due to the preparation of the Census returns and also to an important change which it has been found necessary to make in the tabulation of deaths. The report of the medical officer of the Local Government Board, to which the honourable Member refers, has gone to press and will, I understand, probably be issued within a month. The issue of the report this year has been delayed through the amount of special work which has been thrown on the medical branch in connexion with the recent small-pox epidemic. I am desirous that reports which are presented in dummy should be issued as soon as possible afterwards; but, as the honourable Member will see, the delay in the present cases was due to exceptional circumstances.

The Army Medical Service.

On the vote of £530,000 to defray the charges for the Army Medical Service MR. BURDETT-COUTTS initiated an interesting debate. He gave MR. Brodrick credit for much energy in reform and several important results, but he contended with emphasis that "the only way to escape from the fatal cycle of medical disaster and attempted reform which had marked the last 60 years was a thoroughly organised system of civilian aid."—MR. BRODRICK said that he fully recognised the services which Mr. Burdett-Coutts originally rendered in bringing forward the question of army medical reform. In the changes that had been made everything had been done to see that the arrangements did not become stereotyped, and in order to avoid that he had enlisted the leading members of the medical profession who were in closest touch with the medical developments of the day. He had been peculiarly fortunate in this respect. He invited the assistance of some of the most eminent members of the profession and he could not express too highly his gratitude to those gentlemen who had given up high fees and personal practice to sit with him on a committee and had also offered themselves as willing to act on the Advisory Board at a merely nominal honorarium. In order that the Army Medical Department might be adequately reorganised, besides the army members, the Advisory Board consisted of eminent civilian physicians and surgeons who attended three or four committee meetings weekly. The War Office had endeavoured to meet their views in regard to pay, the increase of numbers, and the increase of leave for study in the military college, for which a site had been secured. Previously to the appointment of the Advisory Board the number of candidates was not equal to half the vacancies, but since then the numbers had increased and at the last examination there were 72 candidates for 30 vacancies, some of the candidates having occupied positions in the best hospitals. The Advisory Committee had reviewed the whole of the military hospitals in the country and he hopes that they were on the eve of very great changes in not treating so many trifling cases, having a much better equipment, more scientific structures, and a general modernising of the institutions. He had asked Parliament to vote £150,000 which he proposed to

intrust to a small committee, of which Sir E. C. Perry would be chairman, and that committee would apportion the money among the various military hospitals with a view to secure their modernisation. Another point was the organisation of an adequate civilian reserve and the definition of its status as compared with the Army Medical Corps itself. He hoped next session to be able to state that these were accomplished facts.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARBER, G. W., M.R.C.S., L.R.C.P. Lond., has been appointed, *pro tem.*, Acting Resident Physician to the Kalgoorlie Hospital, West Australia, and also Acting District Medical Officer, *pro tem.*, of Kalgoorlie.

BELGRAVE, T. B., M.R.C.S., M.D. Syd., has been appointed Visiting Justice to the Gaols in East Kimberley, West Australia.

BIRKBECK, LAWRENCE HENRY CARR, M.B., B.S.Oxon., has been appointed Medical Referee under the Workmen's Compensation Acts, 1897 and 1900, for Bridgwater, Chard, Langport, Wellington, and Williton.

BLACK, VICTOR, M.B., Ch.M. Edin., has been appointed Officer of Health, *pro tem.*, of Perth, West Australia.

BOYCOTT, A. E., M.A., M.B., B.Sc. Oxon., Fellow of Brasenose College, has been appointed Gordon Lecturer in Experimental Pathology at Guy's Hospital Medical School.

BRUCE, R. T., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Act for the Thames District of the County of Oxford.

CAMPBELL, PETER, M.B. Edin., has been appointed Certifying Surgeon under the Factory Act for the Newport District of the County of Fife.

CUFF, ARCHIBALD, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Surgeon to the Royal Infirmary, Sheffield.

DAWES, R. St. M., L.R.C.P. Lond., M.R.C.S., has been appointed Health Officer of Gawler South, South Australia.

ELLIOTT, CHARLES BOLTON, L. & L.Mid. R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health of Geraldton, West Australia.

HARRATT, T. T., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Act for the Rye District of the County of Sussex.

HOPE, J. W., F.R.C.P. Edin., L.S.A. Lond., has been appointed Medical Officer of Health of Fremantle, West Australia.

HOWARD, T., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory Act for the Portland District of the County of Dorset.

KELLY, T. GORDON, B.A., M.D., D.P.H., has been re-appointed Medical Officer of Health of the Market Bosworth Rural District.

LEMARCHAND, ARTHUR WHARTON, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Referee under the Workmen's Compensation Acts, 1897 and 1900, for Barnstaple, Bideford, South Molton, and Torrington.

PARDOE, JOHN, M.B. Aberd., F.R.C.S. Eng., has been appointed Assistant Surgeon to St. Peter's Hospital, Henrietta-street, W.C.

POYNTON, F. J., M.D., F.R.C.P. Lond., has been appointed Assistant Physician to University College Hospital, London.

RAMSAY, JAMES EDWARD, M.B. Lond., has been appointed Honorary Pathologist and Bacteriologist to the Perth Public Hospital, West Australia.

ROBERTS, R. L., has been appointed Certifying Surgeon under the Factory Act for the Ruabon District of the County of Denbigh.

SIMPSON, LILIAN G., M.D. Brux., L.R.C.P. & S. Edin., has been appointed Assistant Medical Officer to the Camberwell Infirmary, Camberwell, S.E.

STIRLING, EDWARD CHARLES, C.M.G., F.R.S., M.D. Cantab., has been appointed Honorary Consulting Surgeon to the Adelaide Hospital, South Australia.

WALKER, J. W. THOMSON, M.B., C.M. Edin., F.R.C.S. Eng., has been appointed Assistant Surgeon to St. Peter's Hospital, Henrietta-street, W.C.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

CANCER HOSPITAL (FREE) Fulham-road, S.W.—House Surgeon for six months, renewable. Salary £70 per annum, with board and residence.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, and attendance.

HUNTINGDON COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with allowances, and board and lodging.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea.—Studentship (value £150) in the Bacteriological Department.

KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £90 a year, with board and lodging.

LEEDS GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £50 a year, with board and lodging.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Junior House Surgeon. Salary 60 guineas per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

NEWCASTLE-ON-TYNE, HOSPITAL FOR SICK CHILDREN.—Male Resident Medical Officer. Salary £100, with board, lodgings, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Honorary Dental Surgeon.

PRESTON, LANCASHIRE COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, unmarried. Initial salary £175, with apartments, board, washing, and attendance.

POPLAR UNION.—Dentist. Salary £60 per annum.

QUEEN'S HOSPITAL, Birmingham.—Two House Surgeons. Salary at rate of £50 per annum, with board, lodging, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent-garden, W.C.—House Surgeon for six months. Salary at rate of £100 a year, with board, lodging, and washing.

SALFORD UNION INFIRMARY, Hope, near Eccles.—Male Assistant Resident Medical Officer. Salary £150 per annum, with apartments and attendance.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Pathologist.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

STOKE-UPON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Assistant House Surgeon for six months. Honorarium £25, with board, apartments, and washing.

SUSSEX COUNTY HOSPITAL.—Second House Surgeon and Anæsthetist, unmarried. Salary £70 per annum, with board, washing, and residence.

WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Liscard.—House Surgeon, unmarried. Salary £100, with apartments, board, and service.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

WEST AFRICAN MEDICAL STAFF, Colonial Office, S.W.—Seven Medical Officers. Salary £400 to £500 a year, with quarters, &c.

Births, Marriages, and Deaths.

BIRTHS.

BEVEN.—On August 2nd, at Balham-hill, S.W., the wife of Octavius Beven, M.D. Durh., of a son.

COLE.—On July 30th, at Clarendon-square, Leamington, the wife of T. E. Cecil Cole, M.B. Oxon., of a son (stillborn).

HARTLEY.—On August 1st, at Porchester-terrace, Hyde-park, W., the wife of Reginald Hartley, M.D. Durh., F.R.C.S. Edin., of a daughter.

PILCHER.—On July 30th, at Boston, Lincolnshire, the wife of Cecil Westland Pilcher, M.R.C.S., L.R.C.P. Lond., of a son.

TURNER.—On July 30th, at Grafton House, Buxton, to Mr. and Mrs. Turner, a daughter.

MARRIAGES.

BAKER—HINDLEY.—On July 30th, at the Church of St. ary, Plaistow, Kent, Arthur Ernest Baker, M.R.C.S., of 44, Brook-street, London, W., to Agnes Flora, youngest daughter of the late Charles H. Hindley.

DUPREY—THIBOU.—On July 15th, at the Wesleyan Chapel, St. John's, Antigua, West Indies, by the Rev. J. R. F. Tull, Albert Joseph Boniface Duprey, M.R.C.S. Eng., L.R.C.P. London, to Esther Sophia, eldest daughter of Mr. and Mrs. Joseph T. Thibou, of New Bridge House, St. John's, Antigua.

GILMOUR—RUTHERFORD.—On the 6th inst., at the Crichton Memorial Church, Dumfries, by the Rev. Thomas Rutherford, M.A., Minister of Dunkeld (uncle of the bride), assisted by the Rev. John Paton, D.D., Minister of St. Michael's, Dumfries, John Rutherford Gilmour, M.B., F.R.C.P. Edin., Medical Superintendent of Scalebor Park Asylum, Burley-in-Wharfedale, near Leeds, to Dorothy, youngest daughter of James Rutherford, M.D., F.R.C.P. Edin., J.P., Crichton House, Dumfries.

MORRISON—MATTHEWS.—On August 1st, at St. George's, Hanover-square, by the Rev. David Anderson, James Morrison, M.D., of 11, Brook-street, Hanover-square, to Henrietta Frances, youngest daughter of the late Mr. H. G. Matthews, J.P., of Southsea.

DEATHS.

DAVIES.—On Sunday, June 28th, Hope Templer Davies, age six, the dear little daughter of Arthur Templer Davies, M.D., F.R.C.P.

HENDERSON.—On July 23th, at Florence, William A. Henderson, L.R.C.P. and L.R.C.S. Edin., late Surgeon to the Imperial Maritime Customs, Chefoo, China, aged 57 years.

MELLER.—On August 1st, at Tor Villa, Matlock Bath, Charles Matthias Meller, M.D., M.R.C.S., L.S.A., of Shire House, Yorkshire, late Medical Officer of Health for Carisbrooke, aged 83 years.

SWAYNE.—On August 1st, at Pembroke-road, Clifton, Bristol, suddenly, Joseph Griffiths Swayne, M.D. Lond., M.R.C.S., L.S.A., in his 84th year.

WALKER.—On the 17th inst., suddenly, Hunter Urquhart Walker, L.M., L.R.C.P., L.R.C.S. Edin., of 1, Pembury-road, Clapton, son of the late Rev. Alexander Walker, for many years Senior Chaplain of the Scottish Church, Madras Presidency, and lately Minister of Rescobie, Forfarshire.

WEAVER.—On the 1st inst., at Westbrook, Southport, James Weaver, M.D., aged 71 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A LAY VIEW OF THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—The following cutting from the *Globe* I think illustrates the attitude adopted by a large number of people in this country:—

> A better illustration of truly paternal legislation could hardly be found than in the attempt of the German Federal Council to prohibit the sale of certain well-known patent medicines in Germany. Apparently a man may not now even drug himself to his liking in that most official land, and if some unauthorised person discovers a really valuable remedy of which the doctors cannot ascertain the ingredients, and therefore violently disapprove, no German can obtain the benefit of it. Our own system has its defects, but it is at least a very long way superior to this.

The paragraph shows not only an utter want of appreciation of the damage to person and pocket that patent medicines may do, but a forgetfulness brief of inexcusable ignorance of the fact that the "man in the street" cannot possibly be a judge of what drugs he should give himself, and that laws such as the one referred to protect those who are unable to protect themselves. The words "therefore violently disapprove" show that the writer of this paragraph has an utterly perverted idea of the attitude of the medical profession upon self-drugging and quack medicines.

I am, Sirs, yours faithfully,

August 1st, 1903. A. W. F. (M.D.)

*** We assume that our correspondent, with whose views we agree in the main, is advocating similar legislation in this country. But as long as any person, however ignorant, is allowed to prescribe for his fellows it is hopeless to expect any Government to try to protect foolish people against themselves. The view of the writer in the *Globe* is not that taken by the better instructed portion of the laity.—ED. L.

"A DANGEROUS PAMPHLET."

To the Editors of THE LANCET.

SIRS,—In consequence of the article which appeared in THE LANCET of August 1st, we have discontinued to supply the pamphlet complained of except to medical men. Copies have been given to the public on their request, mostly to readers of the *Scotsman*, in consequence of a letter appearing in it on July 13th last and also one on August 19th, 1902. Not more than 70 or 80 have been sent out in this way and in all cases they have been applied for. We have never circulated this pamphlet broadcast but have sent out one with each pipe; we have supplied these pipes to medical men and to their order since 1878, with the exception of about a dozen, and these were sold on the recommendation of those who had themselves used them—in some cases foreigners—at intervals. We are sorry indeed to find that our action is so strongly disapproved—we hope under a misapprehension of the facts. The members of the medical profession have hitherto been our best friends and we most sincerely hope will continue to be so. We are, Sirs, yours faithfully,

GAMBLE AND CO.

Edwardes-terrace, Kensington-road, W., August 2nd, 1903.

ST. FRANCIS HOSPITAL FOR INFANTS.

To the Editors of THE LANCET.

SIRS,—I have received a circular letter from Mellin's Food, Limited, in which the St. Francis Hospital for Infants is referred to. Reference is also made to statements occurring in the speeches of Dr. Henry Ashby and myself on the occasion of the opening of the hospital. The general tenour of this document may lead some members of the profession to think that the hospital is in some way connected with the use of the preparation known as Mellin's Food. I therefore desire to prevent any misconception on this matter. It has never been used in the hospital. I am, Sirs, yours faithfully,

Harley-street, W., July 31st, 1903. RALPH H. VINCENT.

A STORY OF THE EARLY PART OF THE NINETEENTH CENTURY.

To the Editors of THE LANCET.

SIRS,—I was much interested in the letter of a lay correspondent published in THE LANCET of July 25th, p. 278, which gave a short description of the mode of practice of the so-called "Whitworth Doctor" of Oldfield Lane. His description is fairly true, but not all of it. One brother, F. S. Taylor, died at the residence of his son in Sheffield in October, 1886, in my presence (where I was an assistant), nearly 90 years of age. He left seven sons, five of whom qualified in medicine, and all did well. Two followed the bone-setting business, but neither of them with the success of their progenitors. It was not in the Epsom salts and antimonial purgations that their success lay, but in the celebrated black plaster and red bottle. This was compounded of ingredients purchased separately at different druggists in Leeds and London and mixed by themselves at midnight, and if it had no other merit it never disagreed with any skin and was never followed by any pustulation. I saw much of bone-setting so-called and treatment of injuries to joints that would be of great value to many country surgeons, and so much did I interest myself in the craft that I was offered to be initiated into the secret if I would take the pledge of secrecy. This I declined to do and I fancy the secret died with the death of my preceptor, which took place somewhere about 1880.

I am, Sirs, yours faithfully,

August 3rd, 1903. F. A. D. GODFREY, L.R.C.P., L.R.C.S. Edin.

A NEW LIGHT AND COLOUR BATH.

To the Editors of THE LANCET.

SIRS,—I am desirous of bringing before the notice of the profession a new light bath made to my order by the Sanitas Electrical Company, Soho-square. It is a reclining one, fitted with both the arc and the incandescent light. The lamps of the latter are of three colours—red, blue, and ordinary white; either series of colours can be switched on separately. A more extended use of the electric light bath has confirmed me in my opinion on the following points: 1. The therapeutic action of the incandescent lamps is chiefly sudatory. 2. Blue rays act well in many neurotic cases, chiefly by suggestion. 3. The arc light (and heat therefrom) is a successful curative agent in rheumatism, gout, myalgias, psoriasis, catarrh, &c. In acute laryngitis I have seen very good results. 4. As a general tonic the light bath is superior in every way to the Turkish bath.

I am, Sirs, yours faithfully,

J. STENSON HOOKER, M.D. Durh.

Gloucester-place, W., July 27th, 1903.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any reader of THE LANCET kindly recommend a home for a man with hemiplegia and delusions? He can pay from £1 to £1 10*s.* a week. I am, Sirs, yours faithfully,

36, Albert-street, Rugby, July 17th, 1903. M.R.C.S.

ERRATUM.—Mr. S. R. Scott writes:—With reference to my article on a Modification of Roughton's Splint for Pott's Fracture, in THE LANCET of August 1st, p. 325, may I point out a small error. In line 16 of the article, which reads thus: "being to avoid an extended or inverted position of the foot," "inverted" should read *everted*.

V. E.—From the information before us we consider that the assistant is entitled to the fees in so far as regards patients notified by himself. The matter, though a small one, should form the subject of future arrangement between the head surgeon and the assistant surgeon.

C. M. W.—We do not know of any such institution for nurses solely, but as regards hospital nurses some hospitals have convalescent homes attached to them to which the nurses can go in case of need.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 6th, 1903.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 a.m.
July 31	29·88	N.W.	...	77	66	55	54	59	Overcast
Aug. 1	30·05	S.W.	0·02	116	71	56	59	61	Cloudy
,, 2	29·91	S.W.	0·30	120	69	56	57	59	Cloudy
,, 3	29·89	W.	...	127	72	57	62	64	Cloudy
,, 4	29·89	S.W.	...	95	70	56	59	62	Cloudy
,, 5	30·01	W.	...	103	69	56	58	62	Cloudy
,, 6	30·19	W.	...	120	68	53	55	61	Fine

During the week marked copies of the following newspapers have been received: *Surrey Comet, Reading Mercury, Aberdeen Free Press (Weekly), Literary Digest (New York), Scientific American, Sheffield Daily Independent, Aldershot News, Army and Navy Gazette, Daily Mail, Yorkshire Post, Dublin Express, Hertfordshire Mercury, Sanitary Record, Daily Graphic, Oxford Chronicle, Liverpool Courier, Plymouth Mercury, City Press, Daily Chronicle, Southport Visitor, Engineer, Cromer and North Walsham Post, Echo, Star, Westminster Gazette, Daily Telegraph, Eastern Morning Gazette, &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.) Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat, (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3.30 P.M. Dr. Davis: Medical Cases. (Medical wards.)

TUESDAY (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Heart Disease in Children.

WEDNESDAY (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Armour: Suppurative Diseases of the Central Nervous System.

THURSDAY (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—4 P.M. Mr. Edwards: Surgical Cases. (Surgical wards.)

FRIDAY (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Discharge from the Ear: Causes and Treatment.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1903, which was completed with the issue of June 27th, and the Title-page to the Volume, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1903 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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